Evaluation of SDN Beranga Autism-Specific Preschool: Final Report

Prepared for: SDN Children's Services

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Glossary

AAC – Augmentative and alternative communication

ADHC – Age, Disability and Home Care (NSW)

ASD – Autism Spectrum Disorder

ASELCC – Autism Specific Early Learning and Care Centre (ASELCC)

CCS – Child Care Subsidy

ECEC – Early Childhood Education and Care

ESDM – Early Start Denver Model

EYLF – Early Years Learning Framework

IEP Assessment – Individual Education Plan

LBOTE – Language Background other than English

NDIS – National Disability Insurance Scheme

1 Executive Summary

The Social Policy Research Centre at UNSW Sydney was commissioned in June 2021 to undertake an evaluation of SDN Beranga Autism Specific Preschool (SDN Beranga).

The SDN Beranga model is built on three layers of practice:

- high-quality early childhood education and care practices

- evidenced based, best practice early childhood intervention strategies

- comprehensive autism-specific approaches.

Since 2018, SDN Beranga has been providing sessional early education for 81 preschool-aged children through a community preschool model. The children are grouped into three cohorts, with 27 children attending at a time. Each cohort is split into three classrooms (9 students in each classroom), with one room leader and two educators in each classroom. The 1:3 ratio is much lower than typical preschools or Long Day Care Services for this age group, which are set at 1:10 under the regulations for New South Wales (NSW).

The findings from the study are based on a short online survey (completed by 37 parents), analysis of child developmental records for 66 children, interviews with 20 parents, and a review of relevant literature related to effective service models for autistic children in the years before formal schooling.

Child data records and developmental outcomes

SDN Beranga undertakes two assessments with children within their first year, one to set a benchmark and another to check progress later in the year. In addition, children who attend for more than one year will be assessed once per year after that. An Individual Education Plan Assessment Tool is used to record children's ability across 83 tasks/indicators, which are grouped in 13 Domains and 5 Learning Outcomes, to align with the Early Years Learning Framework. Most children would be assessed between February and March during their first year, and again around September and October as this aligns with most enrolment dates. However, there are times when children are assessed outside these timeframes as they may have started later in the year.

Two types of analyses were undertaken: first, an indicator-focused analysis looked for trends across the 13 domains to identify whether children improved more on some domains and indicators than others. To do this, the average change between assessments was calculated for all children for each indicator (n=83).

Overall, the average change was positive (above 0) for all indicators, which means that in most cases children improved for each indicator that was tested. However, there is wide variation across indicators and domains in terms of average change. Despite this, we can see that for some domains, the average change was more consistent across the indicators, compared with other domains. On average, children improved the **most** across indicators in Domain 5 (Toileting and hygiene), Domain 6 (Dressing), Domain 3 (Group participation), Domain 11 (Understanding) and Domain 12 (use of language).

It should be noted that there is some correlation between the level of the first assessment and the amount of change, or improvement. That is, the children who required the most assistance at the time of the first assessment were more likely to show greater improvement for these indicators. This was particularly evident for indicators in Domains 5 (Toileting and hygiene), 6 (Dressing) and 12 (Use of language).

Second, child-focused analyses were undertaken to identify trends and differences by demographic characteristics or service use. Key findings included:

- Children from a language background other than English (LBOTE) were more likely to improve on the majority of indicators within a domain, compared with those not from LBOTE.

- Children in ASD (Autism Spectrum Disorder) Level 1 and 2 were more likely than Level 3 to improve on the majority of indicators for most domains.

- Across most domains, children from Priority Access Group 2 were the most likely to improve on the majority of indicators within a domain.

- Children with a greater duration between assessments (9-22 months) were more likely to improve on the majority of indicators than those with a shorter duration between assessments (4-8 months).

- Children who were 3 at the time of their first assessment showed greater improvements (compared with the children who were 4) between their first and second assessment, particularly Domain 1 (Transitions and Routines), Domain 2 (Social skills), Domain 3 (Group participation), Domain 10 (Understanding) and Domain 11 (Use of language).

These findings appear to be consistent with other literature looking at the impact of autism specific ECEC on children's social and emotional development. As noted in Section 5, the use of standardised tools to complement SDN Beranga's existing IEP Assessment Tool would allow for longer term monitoring and evaluation. This would be especially important to assess whether changes to the delivery model make a difference for children's and families' outcomes.

Parent satisfaction

Using a short online survey (completed by 37 parents) and interviews with 20 parents of children attending SDN Beranga, the researchers explored parents' views and experiences of Beranga preschool. Overall, parents interviewed reported that they had witnessed improvements in their child's social and cognitive development, in some cases significant changes. Many parents felt that these changes were a result of, or facilitated by, their child's attendance at Beranga in combination with working with dedicated specialist therapists. In Section 5, we present findings from the analysis of child data records, complemented by findings from the family survey and interviews.

In both the survey and interviews, the pedagogical approach was identified as central to parents' decisions to use, and satisfaction with, SDN Beranga. Overall, families talked about the pedagogical strengths of SDN Beranga, particularly the strategies and approaches educators used when communicating with the children. These aspects of educational practice are, of course,

facilitated by the low ratios (1:3 instead of 1:10) and small group sizes (9 in each room) that are not viable in mainstream settings without significant additional funding and higher fees.

Parents talked positively about the low ratios and child-centred approach of the preschool program, including the inclusion of parents in the Individual Education Plans. Through involvement in developing the IEPs and communication with educators and therapists, many parents were able to improve their own understanding of their child's needs and increased their capacity to respond and communicate effectively with their child. This allowed parents to transfer some of the learning approaches from the preschool to the home.

Parents valued the various communication channels utilised between SDN Beranga educators, administrative staff and parents, particularly opportunities to talk with the educators at drop-off and pick-up. Even during restrictions due to COVID-19, parents felt that they were still able to pass on messages to educators and to find out how their child's day had been. This was very important to them. Some parents commented on staff turnover, recognising that it is a challenge across the early childhood education and care sector.

The existing SDN Beranga model allows families with therapists employed by SDN (from the Children's Therapies team) to coordinate visits on site at SDN Beranga, both in the clinic and in the classroom. This provides the opportunity for therapists to support children in the classroom setting, and also to have sessions with the parent and child in the clinic. This flexibility for families to have SDN therapists visit their child in either a classroom or clinic setting was valued and viewed as a positive element of the SDN Beranga model.

Sustainability of the preschool model and consideration for future service delivery

The change in funding for disability services initiated SDN Beranga's decision to change from a long day care to a community preschool model. Overall, staff and stakeholders were supportive of the shift to a preschool model, noting that the consistency in children's groups across the week, and the common roster for staff across the week was better for children and staff. Stakeholders, and some families, commented on the strengths of the existing service model, as well as areas for consideration.

Findings from the qualitative data, particularly interviews with stakeholders, and from the review of literature demonstrate the high resource needs required to implement effective autism-specific services. There are high staffing costs associated with high ratios, as well as additional costs to providing family-centred care, and support to link families and children to other local services. With high staff turnover and difficulties recruiting, there is an ongoing need to invest in training and professional development in order to deliver quality service to children and families.

Within these constraints, there are some possibilities for adapting the existing model to both build on the strengths and to address areas identified in the interviews and literature that would support SDN Beranga as a leader in developing innovative practices for working with autistic children and their families. The report provides options to adapt the SDN service model, including expanding the SDN Beranga model to reach more autistic children within an inclusive setting. There are various ways such a program could be designed, for example having one autism-specific room within a long day care service that allows for periods of the day with autism-specific programming and

periods of the day with mixed settings. Other considerations for future service delivery include enhanced training and professional development opportunities for educators, re-establishing connections with mainstream ECEC services, capacity building for parents and adapting data collection and measurement scales that can improve monitoring and evaluation of children's outcomes over time.

2 Introduction and Background to SDN Beranga Preschool

The Social Policy Research Centre at UNSW Sydney was commissioned to undertake an evaluation of SDN Beranga Autism Specific Preschool (SDN Beranga).

The SDN Beranga model is built on three layers of practice:

- high-quality early childhood education and care practices

- evidenced based, best practice early childhood intervention strategies

- comprehensive autism-specific approaches.

Beranga is an Aboriginal word in the local Darug language meaning 'we belong'. SDN sought and received permission from Aboriginal local elders to use this name.

SDN Beranga opened in 2013 and originally the model was funded through NSW Ageing, Disability and Home Care (ADHC). SDN Beranga was based on an integrated service delivery model which included a long day care centre which provided high quality early childhood education and care, early intervention supports to autistic children as well as an outreach program referred to as the satellite program. The centre was referred to as the 'Lighthouse' and had 27 places for children per day. It had higher ratios of educators to children as well as allied health supports integrated within the educational program.

The 'Satellite Program' included early childhood teachers and social workers using a coaching model to support mainstream early childhood education and care (ECEC) services to include autistic children in their services. Prospective Satellite centres signed a Collaboration Agreement with SDN to commit to monthly coaching sessions with SDN as well as reflection on practice sessions with other Satellite Centres and training with SDN. They also committed to enrol a minimum of two autistic children in their centre.

In 2018, SDN Beranga shifted to a community preschool model in order to survive the loss of funding due to the introduction of the National Disability Insurance Scheme (NDIS). As the NDIS was implemented in Western Sydney, ADHC funding ceased and new government funding did not align to the model. To ensure that SDN Beranga could continue with high quality education and care, and to ensure it aligned with recommendations from Prior and Roberts (2012) of two adults for every six children, SDN ceased some aspects of the service delivery within the model.

With the transition to the NDIS, all allied health supports previously funded through ADHC transferred to the NDIS and therapists could no longer be funded through the preschool itself. Under the current model, families can still receive allied health support at SDN Beranga through the NDIS if they choose to use their NDIS funding to access SDN Children's Therapies. SDN Children's Therapies is a registered provider delivering NDIS supports to participants within the NDIS. It has a group of therapists based at the preschool; however, they also support other children in the community up to 16 years old, including through home visits.

The Satellite Program was not able to be included in the preschool funding model as Community Preschool Funding Guidelines did not include provisions for the Satellite Program in the delivery of services; therefore, it was no longer financially viable for SDN to continue to deliver this service.

Since 2018, SDN Beranga has been providing sessional early education for 81 preschool-aged children through a community preschool model. The children are grouped into three cohorts, with 27 children attending at a time. Each cohort is split into three classrooms (9 students in each classroom), with one room leader and two educators in each classroom. The 1:3 ratio is much lower than typical preschools or long day care services for this age group, which are set at 1:10 under NSW regulations.

Two of the cohorts are made up of 4-5 year-old students in the year before formal schooling, and one cohort is made up of three-year-old children. The two cohorts of 4-5 year-old children attend SDN Beranga for 12.5 hours/week over two days/week, on Monday/Tuesday and Thursday/Friday, respectively. The third cohort, with the 3-year-old children, attend one day only, on Wednesdays, for 6.25 hours a day. The preschool operates for 48 weeks of the year.

The Beranga team includes 10 educators on the floor (three per room with an additional float educator working across rooms as needed). One of the educators is the Educational Leader and the service also has a Centre Director, Centre Administrator, Centre Cook and Family Resource Worker. The Director reports to the Operations Manager, Children's Therapies and additional operational support is provided through SDN Shared Services. The preschool is supported through the SDN casual educator pool and local external casual agencies to support the service when staff take leave. SDN Beranga seeks to facilitate a range of outcomes for children and families who access the service, including child development, education, behaviour, and child and family wellbeing.

The funding and policy arrangements guiding the delivery of early education and preschool for children in New South Wales is complex and while some changes have been announced, the details have not been released. As section 4 details, the research team understands the limitations of service models and delivery options within the context of state government funding, federal Child Care Subsidy funding (which SDN Beranga Preschool does not receive), and other funding streams, namely NDIS for individual families.

However, SDN Beranga does fall under the governing body of all early childhood education and care services and therefore, all service delivery complies with the National Quality Framework and delivers an educational program guided by the National Quality Standards and Early Years Learning Framework (ACECQA, 2018).

Drawing on available data sources, and methods described below, this report assesses the strengths and areas for improvement. The analysis and considerations recognise that the needs of children, families, staff and the service as a whole must be weighed up when making any decisions about the design and delivery of the service. The outcomes and impacts are, where possible, evaluated against the program logic.

In April 2022, SDN decided to align with the autistic communities' views on the language used when talking about autism. This is based on consultation with Autism CRC as the autistic community voiced that identify first language is preferred (Trembath et al, 2022). Identity first

language understands autism as an inherent part of the child's identity whereas person first language places the person first and the condition thereafter, such as a person with cancer. Autistic advocates prefer identity first language; however, SDN acknowledges that no one term is preferred by all people. This document will also use identity first language such as 'autistic child' or 'autistic' rather than 'child with autism' and avoids referring to autism as a disorder where possible. Quotes from interviews and research may use other terminology.

2.1 SDN Beranga program logic

SDN Beranga has developed a model that focuses on high-quality autism specific early childhood education for autistic children. The model is characterised by:

- low child to educator ratios of 3:1, with a total of 9 children and 3 educators per room (27 children across the whole Centre)

- an educational program guided by the National Quality Standards and Early Years Learning Framework

- use of a wide range of approaches, techniques, and tools (visual communication tools, sensory experiences) that are effective for communicating with and supporting the engagement of autistic children

- individualised planning and goal setting

- integration of NDIS funded therapy sessions with individual children (speech, Occupational Therapy (OT), psychology) inside and outside the classroom

- prioritisation of children in the year before school (4-5 years old) for 2 days (12.5 hours) per week, and 1 day (6.25 hours) for 3-year-old children

- building parental skills / knowledge / confidence and involvement of parents in select activities (during preschool hours)

- transition to school support.

Table 1 presents the program logic for SDN Beranga, on which the evaluation is based. The program logic is based on a theory of change which asserts that children with developmental and learning disabilities benefit from being provided with specialist intensive support during their early years, and that this will lead to them being better prepared to engage in school. The model also assumes that support for the family is necessary, both for the child's developmental outcomes but also for the wellbeing of parents and siblings. The researchers also acknowledge SDN's program logic where the outcome is that 'children learn, develop and experience wellbeing in inclusive environments' (SDN program logic, provided to Research team). The program logic below is intended to complement the SDN logic outcomes (loved and safe, healthy, learning, participating, and positive sense of identity and culture). We return to the program logic in the Discussion and Conclusion to identify elements that may be strengthened or modified through changes in practice and program delivery.

Table 1 SDN Beranga Program Logic

Needs	Inputs	Process	Output (participation)	Outcomes
Children with developmental and learning disabilities, including autism, require specialist early intervention to reach their potential and enable them to participate in mainstream education and the community. Parents of children with developmental disabilities may require additional guidance and skills to support their child's development.	Educators trained and experienced with autistic children and children with a disability NDIS- therapists Family Resource Worker Funding Smaller classrooms, higher staff to child ratio Program policies, procedures, mentoring, professional development/training opportunities Research evidence on what works with autistic children and children with developmental delays Program resources (toys, didactic tools, tablets, videos) and tools/technology to easily share information, children's progress Early learning centre with therapy rooms, child-friendly in- and outdoor spaces	Play-based activities (e.g. messy eating to stimulate senses holistically) NDIS-funded intervention with therapists in and outside the centre Educators and parents identify child's needs, plan, and set goals. Sharing of information/ communication with other providers involved in child's education Parents receive information, referral, strategies, tools and resources to use at home. Families and the child receive transition to school support (information, referral, therapist involvement in school setting).	Children aged 3 to 5 with developmental disability and/or autism participate in early childhood education that meets their needs. Parents and families feel included, supported, and connected to peers (other families). Early childhood educators work in environments that value their skills, experience, and enable creative use of resources and didactic approaches.	Children aged 6 reach developmental, social, language and cognitive milestones (e.g. toilet trained, expression of needs - verbal and non-verbal communication (sign-language), engage and play with peers). Children with developmental delays are better prepared and supported to take part in mainstream and specialist primary school education. Parents feel empowered, informed and resourced to support their child's development and ongoing education and transition to mainstream/ school. Improved child-child, and child-parent relationships Family wellbeing is enhanced.

2.2 Scope of evaluation

The research team adopted a mixed-method approach to evaluate SDN Beranga. The research team worked closely with SDN Children's Services in the development of the work plan, particularly

in relation to the ethical considerations for the recruitment and consent of participants across the qualitative and quantitative methods. This close working relationship has been essential and valuable to ensure the project aligns with the everyday practices at SDN Beranga, while also recognising the ethical requirements of undertaking a research project with parents and staff.

The evaluation has two primary purposes, to:

1. evaluate the impact of the program on the child and family's wellbeing

2. examine the viability of the service model.

To address these aims, the evaluation consists of five key components:

    i.   Family survey (online)
    ii.   Family interviews
    iii.   Stakeholder interviews
    iv.   Analysis of child data records
    v.   Policy and program literature review.

This report extends the analysis from the interim report (that focused on family data) to include an analysis of the stakeholder interviews, analysis of the child data records, and a review of the literature as it relates to findings from the other components of the evaluation. In doing so, this report triangulates the data to provide a balanced perspective about the strengths and weaknesses of the SDN Beranga Preschool model, particularly in relation to the impact of the service on children and families, and the viability of the service model within the current policy landscape. This triangulation of data provides an evidence base to inform conclusions and recommendations for SDN to consider in adapting its service delivery model.

3 Methods: Recruitment, sample and analysis

As outlined in section 2.2, the evaluation as a whole consists of five main components. This section details the methods used for each of these components.

3.1 Policy and program review

SDN Beranga Preschool operates within a complex policy landscape, shaped by the intersection of policies, regulations and funding at the state (NSW) and Commonwealth level. The research team reviewed the range of funding schemes and policies relevant to SDN Beranga Preschool and other ECEC services for children and families including any support specifically for autistic children. The findings from this review, in combination with the literature and stakeholder interviews, inform our assessment of the viability of the SDN Beranga Preschool model and help to identify options to strengthen and adapt the model.

One limitation of the policy and program review is that the current policy landscape makes it difficult to fully understand and assess the viability of the model. Since 2020, community preschool has been free in NSW with preschools receiving additional funding for COVID-19 Free Preschool and then Start Strong Free Preschool in 2022. In addition, the NSW Government recently announced a commitment to funding a universal pre-kindergarten year in the year before primary school as well as other changes to funding and policy in ECEC. This will impact where SDN Beranga fits into the early childhood and school systems.

3.2 Literature review

The research team conducted a focused literature review to situate and strengthen our analysis of the qualitative interviews and child data records within the context of other relevant research studies. The review of the literature aimed to answer the following questions:

1. What is good practice in transition to school support for children with developmental delays? And why is it important?

2. What is good practice for increasing the capacity of parents to implement autism-specific therapies at home?

3. Are there any key lessons in the literature about the delivery of early intervention to preschool children in autism-specific versus inclusive settings?

4. Are there any examples of models that do outreach to mainstream settings? How are they funded?

The review was undertaken using a series of key word searches and reviewing the references from key Australian research studies on the topic. The findings from this review are discussed throughout the report as they relate to the findings from the qualitative interviews and child data records.

3.3 Family survey

A family survey was developed to meet two key purposes of the research design:

- a tool to collect summary information about a large sample of preschool families

- a tool to recruit to families willing to participate in an interview.

In consultation with SDN Children's Services, the research team created five survey questions (Appendix B) that asked families about their enrolment at SDN Beranga, use of therapies, and overall satisfaction with the service.

Families were invited to participate in the research survey via an email that had a link to the online survey (in Qualtrics). They were also invited via Storypark, an online platform that allows families to view their child's profile as well as receive updates from SDN Beranga, and via text messages. The response rate to the survey was initially low; however, with verbal reminders from Beranga staff, the final sample was 37 completed questionnaires, representing a 45 per cent response rate. Four families expressed their interest in participating in an interview via the online survey.

3.4 Qualitative interviews

The research team undertook qualitative interviews with stakeholders and families, as described below.

3.4.1 Stakeholder interviews

Stakeholder interviews were designed to better understand the strengths and challenges of the Beranga model, including its viability within the ECEC policy landscape, and its position within the broader local service landscape for autistic children and their families. It also allowed an opportunity for the researchers to better understand the rationale for certain aspects of the delivery model, and potential weaknesses or benefits to adapted models, from a service and staff perspective.

In total, 12 stakeholders were interviewed between November 2021 and April 2022. Eight were internal stakeholders, employed by SDN, with a mix of educators, therapists, managers and administrative staff. Four were external stakeholders who have worked with SDN Beranga in different capacities.

One limitation of the stakeholder interviews was the challenge of recruiting a variety of external stakeholders, particularly mainstream services who currently, or previously, have dual-placement children enrolled at their service. It is recognised that COVID-19 imposed barriers to maintaining these connections, due to both resource capacity and restrictions in visiting services.

3.4.2 Family interviews

The family interviews were designed to elicit the experiences of families with children attending SDN Beranga Preschool. As noted above, families were initially invited to participate in an

interview at the end of the online survey. This method of recruitment generated few responses, which can partly be attributed to the COVID-19 restrictions which meant that parents dropped off their children at the entrance of the preschool; therefore, having fewer opportunities to talk with the Director and staff. It was more difficult for the Director and staff to remind the parents about the research study and discuss any questions or concerns they had. Most of the communication was initially through email, Storypark and text messages. The research team and SDN discussed alternative approaches to recruitment, which included increased visibility of a poster at the service, an email reminder about the interviews, and where possible increased verbal communication to parents at drop-off and pick-up. Through these strategies, a total of 16 families were interviewed. A Participant Information Sheet was emailed to all participants, and all participants provided verbal or written consent for their data to be used in a de-identified way for the research study.

A semi-structured interview schedule was developed (Appendix A) to explore the families' experiences of SDN Beranga Preschool. Interviews ranged between 13 and 40 minutes, with most being approximately 30 minutes. Families were given a $50 supermarket voucher as a thank you, and as a recognition of their time and willingness to share their experience.

The interviews were audio recorded and listened to by the researchers. One researcher conducted the majority (13/15) of the interviews and a second researcher conducted 2 interviews. Nine of the 15 interviews were professionally transcribed, and the other half were listened to and detailed notes were written up. The decision whether to professionally transcribe interviews or not, was determined by the richness of the data, the quality of the voice recording, and accents of participants. The participants were assigned pseudonyms by the researcher, which are used to identify participants in the report. No real names are used.

The transcripts were uploaded into NVivo, a qualitative data analysis software, to assist researchers in analysing the key findings and themes from the interviews. The researchers developed and reviewed the NVivo coding structure together. The two researchers shared the coding and analysis of data. After the first researcher coded a number of interviews, the second researcher reviewed the coding of two interviews to check for intercoder reliability. The findings from the analysis informed the development of key themes, as well as areas to explore further in the literature.

3.5   **Child data records**

The SPRC team worked with SDN to generate spreadsheets containing de-identified child data records from various sources which could be linked together. The data sources included de-identified information sourced from: enrolment records, attendance data from the Child Care Management Software (Qikkids), information used for funding applications and data used for the Annual Preschool Census.

The data entry was undertaken by SDN in order to prevent sharing sensitive client information with the researchers and ensure confidentiality. The SPRC team received four separate de-identified files and used the data from these files to create one Microsoft Excel file that included information and indicators of change for each child data record.

Families were given the opportunity to "opt out" if they did not want their child's data records used for the research study. Families were provided with information regarding the research project and the use of de-identified data, with the option to opt out of the research via SMS, email or speaking to SDN or the researchers. This resulted in six children's records being excluded from the research.

Following the cleaning of data records, 66 records were analysed manually (in Microsoft Excel).

3.5.1 Demographics of child data record sample

SDN Beranga typically has 81 children enrolled in their service. This consists of 2 groups of 27 four-year-olds who attend 2 days/week (Mon/Tues or Thurs/Fri) and one group of 27 three-year-olds who attend on Wednesdays. All families enrolled in the service in November 2021 were provided with information about the evaluation and given the opportunity to opt-out of their children's anonymous data records being included in the analysis. Following this process, SPRC received data records for 66 children, representing over 80 per cent of the SDN Beranga cohort.

Of the 66 participants in the sample, there were 14 females (21 per cent) and 52 males (79 per cent). Forty-one children (60 per cent) were from a **language background other than English (LBOTE)**.

Autism Spectrum Disorder (ASD) Diagnostic Level: The data provided by SDN also included each child's ASD diagnosis into the 3 levels as per the diagnostic and statistical manual (DSM), DSM-5. Diagnostic levels were as follows: One child was ASD Level 1 (1.5%), 16 children were ASD Level 2 (24%), and 47 children had Level 3 ASD diagnoses (71%). The ASD level was unknown for one child.

Priority of access: SDN prioritises access to services to ensure that the children most in need of access to services are given priority. Children categorised as Priority 1 have been identified as being at risk of harm. Factors include, but are not limited to, previous or current child protection concerns, engagement with child protection agencies, few support networks and family health and wellbeing concerns. Children in the Priority 2 group may face disadvantage or vulnerability, while Priority 3 includes all other applicants.

10 children were assessed as Priority 1, 31 children (45.6 per cent) were Priority 2 and 24 children (35.3 per cent) were Priority 3. The priority access for one child was unknown.

Age: 39 children were 3 years (47 months or less at first assessment) and 25 children were 4 years (48 months or more) at the time of first assessment.

Aboriginal or Torres Strait Islander background: 5 children identified as Aboriginal or Torres Strait Islander, and 60 children did not. For one child, their Aboriginal background was not stated.

Low Income Health Care Card holders: 34 families (52 per cent) held a Low Income Health Care Card.

ECEC dual placements: 44 of the children (67 per cent) attended another ECEC service as well as SDN Beranga.

Individual Education Planning Assessment Tool

SDN Beranga uses an assessment based on the Early Years Learning Framework to ensure staff assess children's current development when they enrol at SDN Beranga. This informs goals for each child and also supports the service to identify each child's strengths, as well as areas of need. Additionally, the assessment tool ensures SDN Beranga meets the National Quality Standards for ECEC services as well as ensures it can meet the requirements for both Start Strong and Higher Learning Support Funding. More information about the assessment tool used is located in the analyses of child data records.

The **average age at the time of the first Individual Education Planning (IEP) assessment** was 3 years and 10 months, with a range of 3 years to 5 years and 2 months at the time of the first assessment. This reflects the target group of the children at SDN Beranga Preschool, which has a majority (two-thirds) of children who are 4 years or older, and one-third who are three years old.

The **time in between the IEP assessments** ranged from 4 months to 21 months, with an average of 9.5 months. Most assessments were 8 to 12 months apart. The outliers (both shorter and longer durations between assessments) are likely attributed to COVID-19 restrictions where some children did not attend for a long period of time.

A summary of the sample is included below:

Table 2 Characteristics of children

Child & family characteristics		%	Other variables	%
Gender			**Mainstream ECEC attendance**	
	Male	79	Yes	67.7
	Female	21	No	32.3
Low-Income			**Attendance rate**	
	Yes	51.5	Low (30-59%)	28.3
	No	48.5	Medium (60-79%	38.8
ASD Level			High (80-100%)	32.8
	1	1.5	**Months between assessments**	
	2	24.6	4-8 months	57.8
	3	73.8	9-22 months	41.2
Priority Access				
	1	15.4		
	2	47.7		
	3	36.9		
LBOTE				
	Yes	63		
	No	37		
Aboriginal or Torres Strait Islander				
	Yes	7.7		
	No	92.3		

3.6 **Limitations**

- *Policy and program review*: The free preschool funding in place since 2020 makes it difficult to assess the viability of the model. This is exacerbated by the uncertainty regarding future preschool funding, including whether Free Preschool will be extended, and the NSW Government's recent announcements regarding ECEC, including extending school for an additional year prior to kindergarten.

- *Literature review*: In the context of the extensive body of literature that investigates the impact of inclusive versus specialist interventions for autistic children, this evaluation took a broad approach to the impacts on children and families, focusing on key elements of the Beranga model, such as support for transition to school and support for parents. There is limited academic and grey literature that assesses the viability of service models for autism-specific preschools and early years services.

- *Family survey*: The family survey was designed to provide high level feedback about key aspects of the SDN Beranga model. It was also intended as a pathway for recruiting participants for interviews. The low number of survey respondents limit the contribution of this data to the overall evaluation findings.

- *Qualitative interviews*: Recruitment issues due to COVID-19 made it difficult to promote the survey. It is also important to note that SDN Beranga staff had limited contact with external stakeholders and services, which made recruitment for stakeholder interviews more challenging.

- *Child data records*: The research team had no access to standardised tools, so there is no comparative group. It is not possible to compare outcomes in relation to other studies. COVID-19 and related measures also impacted patterns of attendance and family and child wellbeing.

The research team has utilised the data provided by SDN to produce results that show the extent to which children attending SDN Beranga Preschool have improved, or not, across a number of developmental indicators. The data presented in Section 5 shows where groups of children, by demographic or other defining characteristics, have improved more between the first and second assessment. These results must be interpreted with caution for three main reasons. First, there is no control group, so we do not know whether the children would have made these improvements had they not been attending SDN Beranga. Second, the IEP assessment tool used by SDN is not a standardised tool and so we are unable to compare these results with other studies of a similar population of children to assess whether these results are typical for this type of cohort. Third, the pre- and post- assessments were administered at different intervals for different people. From looking at the dates, it is also understood that a number of children may have missed extended periods of school due to COVID-19. For many students, this contributed to missed attendances as well as longer durations between assessments.

Nonetheless, the results show where some groups of children are improving more across developmental domains, and they also show where the sample as a whole is showing greater change across specific indicators. These findings are also complemented by the qualitative interviews with parents and stakeholders.

4 Overview of policy landscape impacting the delivery of early education for autistic children

Support for children and families is fragmented across jurisdictions, Government agencies, and across different ages and education and care settings. This layered approach to support is, in some circumstances, intentional – it provides flexibility and can be responsive to the needs of children across different settings and circumstances. However, the fragmented nature of the support can also limit the options for families with autistic children. This section will summarise the main supports available for preschool aged autistic children in New South Wales. It thus includes funding and policy initiatives specific to NSW and also those that are provided by the Commonwealth Government.

In terms of policy and funding, a key distinction is drawn between early childhood education and care for preschool aged children which occurs in standalone community preschools compared to preschool programs within long day care settings. This distinction determines the levels and types of funding available as well as the type of services offered.

Governments play a role in improving the availability, affordability and suitability of services for autistic children through various grants and programs. The funding provided through these programs can help to increase the number of spaces available or dedicated for autistic children or children with additional learning needs, can support teacher training and capacity building for educators working with autistic children, or can subsidise services or families directly to reduce the fees for families.

As Table 3 summarises, there is a diverse mix of funding programs and subsidies to support autistic children and their families. As with all parents of children below school age, they must choose what services are best for their child and family. This includes weighing up various factors, including but not limited to availability, cost, location, quality, suitability for their child's needs and also the needs of the family, including whether the hours support workforce participation.

Table 3 Summary of Government supports for preschool-aged autistic children, NSW

Type of funding	Community preschools	Long day care services
Start Strong funding	Eligible for Start Strong Preschool	Start Strong Long Day Care funding at lower rate than preschools
Free Preschool funding	Eligible for free preschool funding including • COVID-19 Free Preschool 2020 and 2021	Not eligible; however, LDC services eligible for child care subsidy (CCS) received funding to provide free childcare in 2020 due to impact of COVID-19

	• Start Strong Free Preschool 2022	
Disability and Inclusion Program High Learning Support Needs funding	Eligible for funding based on number of children with additional needs and the level of need	Not eligible
Inclusion Support Program	Not eligible	Program provides support for eligible early childhood education and care (ECEC) services to build their capacity and capability to include children with additional needs, alongside their typically developing peers, so all children have genuine opportunities to access, participate and achieve positive learning outcomes.
Child Care Subsidy (CCS)	Not eligible	Families eligible for CCS depending on income level and other requirements
Start Strong Capital Works Grants Program: **Major Capital Fund** **Crisis Fund** **Minor Capital Fund** **Mobile Fund**	Eligible to apply for grants but limited funding and requirements of the grant may make this difficult	Eligible to apply for grants but limited funding and requirements of the grant may make this difficult
Quality Learning Environments Grants - up to $15,000 for resources, play equipment etc.	Eligible	Not eligible
Autism Specific Early Learning and Care Centres (ASELCC)	Not eligible	6 designated services were funded in 2009-10 across the six states. It is understood that, at the time of writing, three of these are still operating (Tasmania, Victoria and South Australia).
National Disability Insurance Scheme (NDIS)	Services not eligible. Funding provided to individual families for eligible children	

In New South Wales, supports for preschool aged autistic children are provided through the NSW Department of Education for children in community preschools. However, the Commonwealth Department of Social Services (DSS) and Education, Skills and Employment (DESE) provide some funding for children with disability in long day care and family day care settings.

As discussed earlier, with the introduction of the federally funded National Disability Insurance Scheme (NDIS), NSW Government funding (ADHC) that had previously supported the employment of additional allied health staff for SDN Beranga was redirected to the federal NDIS. In the absence of funding to support an integrated model of allied health services, SDN made the decision to shift SDN Beranga from a long day care model to a community preschool model, making it eligible for the Disability and Inclusion Program and the higher rate of Start Strong funding.

SDN Beranga Preschool currently receives (or has recently received) funding through:

- Start Strong Preschool Funding

- Disability and Inclusion Support Program (High Learning Support Needs)

- Quality Learning Environment grants

- COVID-19 and Start Strong Free Preschool funding.

SDN Beranga has also relied on income from fees, with families paying $80 per day (regular), and $40 for families with a concession. The full fee rate is significantly higher than SDN's other two preschools due to the higher staffing costs for SDN Beranga.

Since 2020, families have received free preschool as community preschools have received additional funding intended to replace income from fees. The NSW Department of Education introduced Free Preschool funding in response to the impact of the COVID-19 pandemic alongside free Long Day Care funded by the Federal Government. While free Long Day Care ended, the Free Preschool initiative continued. Start Strong Free Preschool funding began in 2022, although with a lower rate of funding, which did not replace income lost from fees at SDN Beranga.

5 Analysis of child data records

This section presents findings from the analysis of the child data records provided by SDN. The analysis was undertaken by combining the de-identified data from each child's Individual Education Planning (IEP) Assessment Tool alongside de-identified demographic data. A detailed description of the methodological approach for undertaking the analysis is included in Appendix C: Detailed methodology for analysis of child data records.

As discussed in Section 3.5 Child data records, the tool was designed to ensure SDN Beranga meets the requirements of the National Quality Standards. Domains represent the five outcomes in the Early Years Learning Framework, which is the curriculum document that guides all ECEC services in their educational program. The assessment tool was developed by the Educational Leader, who is an Early Childhood Teacher, a Speech Pathologist and an Occupational Therapist at SDN Beranga in 2018. The team broke down each of the outcomes based on knowledge of child development as well as knowledge of the needs of autistic children. The skills under each outcome are broken down in order of complexity starting with more basic skills and moving to higher level skills. This pattern occurs in all domains.

Educators plan to assess each child within the first six weeks of their enrolment date. Once each child is assessed, educators meet with the child's family to develop an Individual Education Plan (IEP) which takes into consideration family preference and the next relevant milestone for the child. A child will receive two assessments within their first year, one to set a benchmark and then one to check progress later in the year. Children who attend for more than one year will be assessed once per year after their initial year. Most children would be assessed between February and March during their first year, and again around September and October as this aligns with most enrolment dates. However, there are times when children are assessed outside this timeframe as they may have started later in the year.

The assessment also supports SDN Beranga to identify individual needs of each child, which supports the service to apply for Higher Learning Support Needs Funding. The service can then allocate specific funds, supports and resources to each child, depending on the needs identified by their families as well as the assessment tool.

5.1   Indicator focused analysis

This analysis focuses on the indicators and domains as described in the IEP Assessment Tool as well as those that are identified in the literature as significant to children's cognitive and social and emotional development, and their readiness for school. This section presents some of the key findings in relation to the **indicator-focused measures**, where the average change between assessments was calculated for all children, for each indicator (n=83).

SDN provided de-identified data from internal assessments (IEP Assessment Tool) and data used for reporting and funding applications. To ensure confidentiality, children were not able to be identified as names and date of birth were removed. The month of the child's birth was retained in order to calculate approximate age at first assessment. The data included:

1. **SDN Beranga IEP Assessment Tool data:** Developmental domains broken down under the learning outcomes of the Early Years Learning Framework (EYLF), duration between assessments
2. **Data from enrolment records, the Annual Preschool Census and information used for funding applications:** low-income status, Priority access, ASD level, ECEC attendance
3. **Demographic data**: Low-income indicator, LBOTE, Gender, Aboriginal or Torres Strait Islander
4. **Attendance data from the Child Care Management Software (Qikkids):** attendance rate.

The IEP Assessment Tool data consists of 83 indicators, grouped into 13 domains across five learning outcomes, aligned to the Early Years Learning Framework, as outlined below. A full breakdown of the outcomes, by domains and indicators is included in Appendix D.

Figure 1: IEP Domains, by EYLF Learning Outcomes

Learning Outcome 1: Children have a strong sense of identity	Domain 1: Transitions and routines
Learning Outcome 2: Children are connected with and contribute to their world	Domain 2: Social Skills
	Domain 3: Group participation
Learning Outcome 3: Children have a strong sense of wellbeing	Domain 4: Mealtimes
	Domain 5: Toileting and hygiene
	Domain 6: Dressing
	Domain 7: Gross motor
	Domain 8: Fine motor
	Domain 9: Emotions
Learning Outcome 4: Children are confident and involved learners	Domain 10: Play
Learning Outcome 5: Children are effective communicators	Domain 11: Understanding
	Domain 12: Use of language
	Domain 13: Purpose and forms of communication

There were six assessment levels used when assessing each child's performance against each indicator:

1 = Independent – child can complete the skill without any support from an adult.

2 = Preparation time – child can complete the skill as long as sufficient time for preparation is provided (for example a timer or a countdown).

3 = Verbal – child can complete the skill with a verbal prompt from an adult (for example a word or phrase).

4 = Visual – child can complete the skill with a visual prompt from an adult (for example a picture or item).

5 = Physical – child can complete the skill with a physical prompt from an adult (for example, an educator putting their hand over the child's hand).

6 = Not yet performing (NYP) – child is not performing or attempting the skill.

While the assessment tool is intended to measure each child's progress and development, the starting point for each child and each indicator varies. Table 4 illustrates how the starting point differed across the domains. The table presents the average rating at the time of the first assessment and the average change. The second column is the average number on the 1 to 6 point scale. A lower number at first assessment means that on average, children started with a higher baseline of skill in this domain; for example children tended to have higher baseline scores in gross motor (2.8) compared with Toileting and hygiene (4.8).

The Average Improvement column shows the average level of change in each domain. A higher score in this column means greater improvement was made. Domain 6 Dressing had the highest average change (1.0) which means the greatest level of improvement. It is important to note that the greater improvement is likely attributed to the fact that children were starting from a lower baseline (represented by a higher number at first assessment).

Table 4: Average baseline assessments and change, by domain

	Average ranking at first assessment (where lower numbers represent higher baseline)	Average Improvement
Domain 7: Gross Motor	2.8	0.5
Domain 8: Fine Motor	3.4	0.6
Domain 4: Mealtimes	3.6	0.5
Domain 10: Play	3.8	0.6
Domain 2: Social Skills	3.8	0.5
Domain 3: Group Participation	4.1	0.5
Domain 11: Understanding	4.2	0.6
Domain 1: Transitions and Routines	4.4	0.6
Domain 12: Use of Language	4.7	0.8
Domain 9: Emotions	4.8	0.3
Domain 6: Dressing	4.8	1.0
Domain 5: Toileting and Hygiene	4.8	0.7

Overall, the average change was positive (above 0) for all indicators, which means that in most cases, children improved for each indicator that was tested. However, there is wide variation across indicators and domains in terms of average change. While there is wide variation, we can see that for some domains, the average change was more consistent across the indicators, compared with other domains.

> ➢ On average, children improved the **most** in indicators in Domain 5 (Toileting and hygiene), Domain 6 (Dressing), Domain 3 (Group participation), Domain 11 (Understanding) and Domain 12 (use of language).

There was sometimes wide variation in the assistance required at the time of the first assessment, meaning that the average improvement for a particular domain does not necessarily represent high levels of improvement for *all* indicators within a Domain.

> ➢ Children appeared to show the **least improvement** on average in Domain 7 (Gross motor) and Domain 9 (Emotions).

Emotions was one domain where, on average, children showed less improvement. At the time of the first assessment, children on average required more assistance (visual to physical prompts), and on average did not show significant improvement between the first and second assessment.

For indicators where children were showing greater independence at the time of the first assessment, it is logical that they were, on average, less likely to show great improvement. This was evident for Domain 7 (gross motor), where for three of five indicators the average level at the time of assessment ranged between performing independently to requiring preparation time. For

these three indicators (moves around space without tripping, has good muscle tone, demonstrates basic gross motor skills), children showed minimal improvement but given the higher level at baseline, no change is recognised as a positive outcome.

> ➢ For other **domains, the variation in change** shows that there was less consistency within domains. This was particularly evident for Domain 1 (Transitions and routines), Domain 2 (Social Skills), Domain 4 (Mealtimes), Domain 8 (Fine motor) and Domain 10 (Play).

For Domain 1 (Transitions and Routines), Domain 4 (Mealtimes) and Domain 10 (Play), there was variation among the indicators within the domain: for the indicators where children required more assistance at the time of the first assessment (with a higher score on a scale of 1 to 6), they showed greater improvement on average. This was evident for the following indicators, by domain:

Table 5: Indicators where children showed greater improvement, on average

Domain 1: Transitions and routines	Carries own bag and puts in locker
	Puts bottle in tray
Domain 4: Mealtimes	Sits during meals
	Feeds self with spoon or fork
Domain 10: Play	Engages in pretend play by self
	Engages in pretend play with others
	Engages in object substitution
	Sorts objects into categories or colours
	Matches pictures or objects

Across these domains, where children showed greater baseline scores (represented by lower numbers on the scale of 1 to 6), children tended to require minimal assistance at the time of the first assessment, but showed less improvement at the time of their second assessment. For example, on average, if children required limited assistance with finger feeding and drinking from a cup at the time of their first assessment, they improved less in this indicator.

5.1.1 Domains with greatest improvement

The findings from the data in the domains below showed the greatest level of improvement. The figures show more improvement across the indicators, with some children improving a lot on some indicators.

Interpreting the graphs in this section:

(x) The (x) on the graphs represent the median change for the IEP indicator, or the change of the child that ranked in the middle for change on each indicator. The change was calculated based on the child's assessment level (between 1 and 6) at the time of the first and follow-up assessment.

The whole population of children in the study is split into four equal groups, or **quartiles**. The group showing the most improvement is the highest quartile, while the group showing the least change (sometimes regression) is the lowest quartile. The groups in the middle are the second and third quartiles, respectively.

The **median** is the change (improvement) showed by the child in the middle of all children. With a group of 65 children, the median will be the child whose score is 33rd(*) on each particular indicator or domain.

The **bar** represents quartile 2 and 3, where the children who are closest to the median (see below). When the bar is longer it generally means there are fewer children who are 'outliers' (see below) for that particular indicator. When the bar is shorter, this indicates that most children showed similar changes. Where there is a long line or dots (see below), this indicates more variation in improvement for that indicator. The **lines** extending below and above the bar represent the maximum and minimum points for most children, respectively.

Outliers: When a maximum or minimum value is 1.5 times above the 3rd quartile, or 1.5 times below the first quartile, the values are considered 'outliers' and are represented as **dots** on the axes.

(*) For some indicators

Domain 1: Transitions and routines

Domain 1 (Transitions and routines) is an important element for supporting children in their transition to school. There were also a few outliers who regressed for 'transitions in and out of centre', 'separates from caregiver', and 'transitions between activities'. It's also important to note the variation within domains. For example, while children improved on average above 1 for 'carries own bag and puts in locker' and 'puts drink bottle in tray', there was on average minimal improvement for 'follows routine instruction' and 'complies with finish instruction'.

Domain 1: Transitions and Routines

Legend:
- Transitions in and out of centre
- Separates from caregiver
- Transitions between activities
- Follows routine instructions
- Copes with unexpected transitions (wet weather, fire drills)
- Complies with finish instruction
- Recognises own belongings
- Packs away
- Carries own bag and puts in locker
- Puts drink bottle in tray
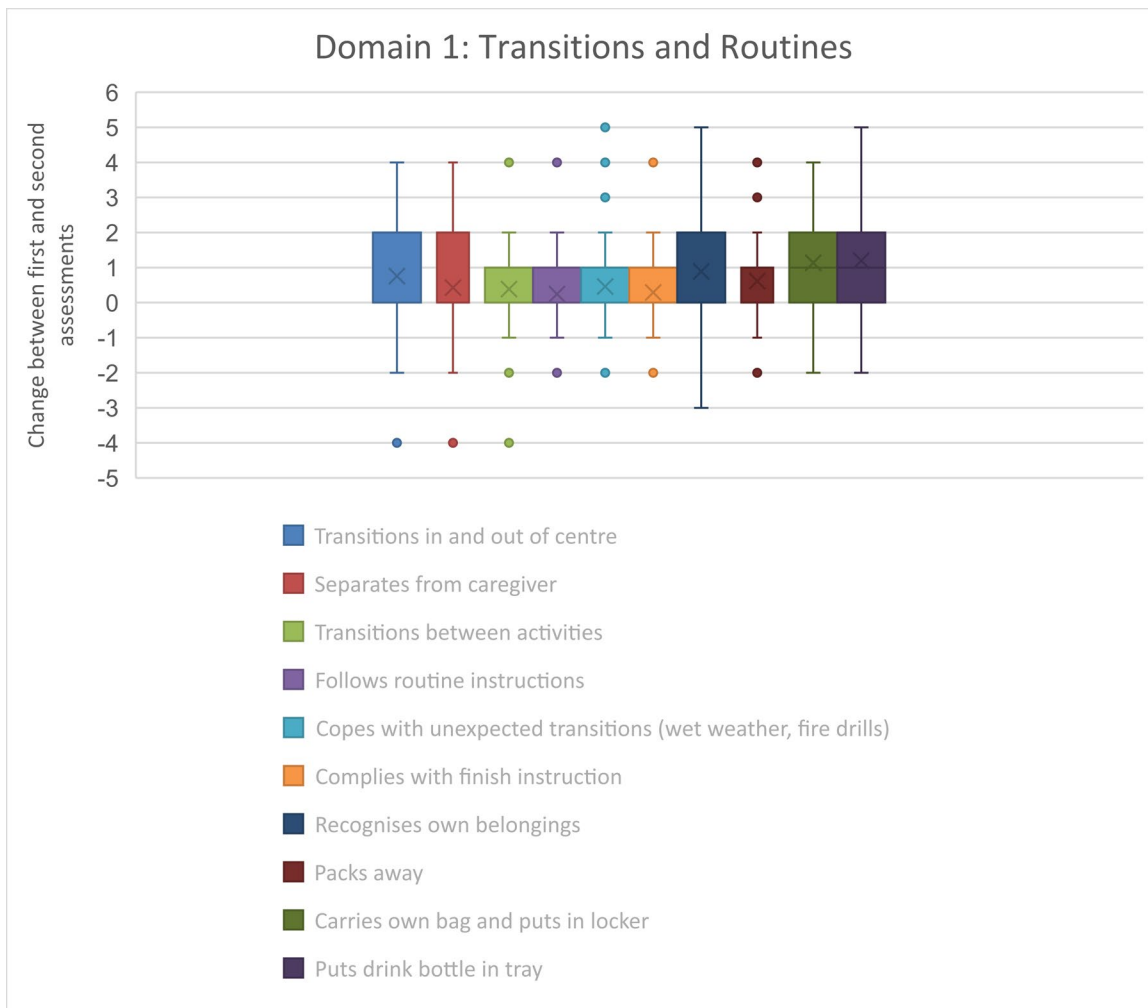
Eapen et al. (2017) found that cognitive ability and adaptive behaviour were associated with successful transition to school outcomes and social skills in the classroom. They emphasise the importance of supporting autistic children in the domains of adaptive behaviour and cognitive ability to support a successful transition to school.

Domain 3: Group participation

Another domain with fairly consistent improvement is Domain 3 (Group participation). In particular, children improved on average by 1.0 for remaining in location during group time for up to 5 minutes. There were few outliers for the indicators in this domain, suggesting that improvement, even if small, was consistent across most children. Referring back to Eapen et al (2017), social skills and group participation are important for transition to school.
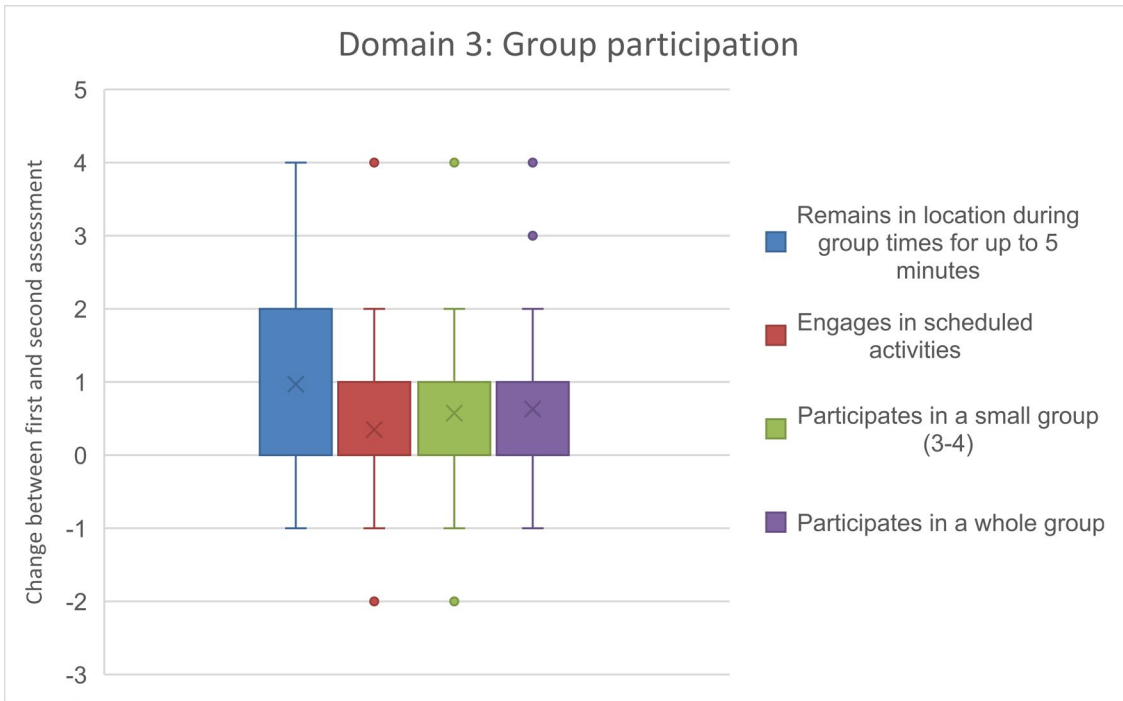
Domain 6: Dressing

Children also appeared to improve consistently across most of the indicators in the Dressing domain. It is unclear from the literature and other data whether this is an area of particular interest for parents, or for transitions and routines more broadly. It is possibly an area that can be explored further to better understand its importance in relation to autistic children's development.
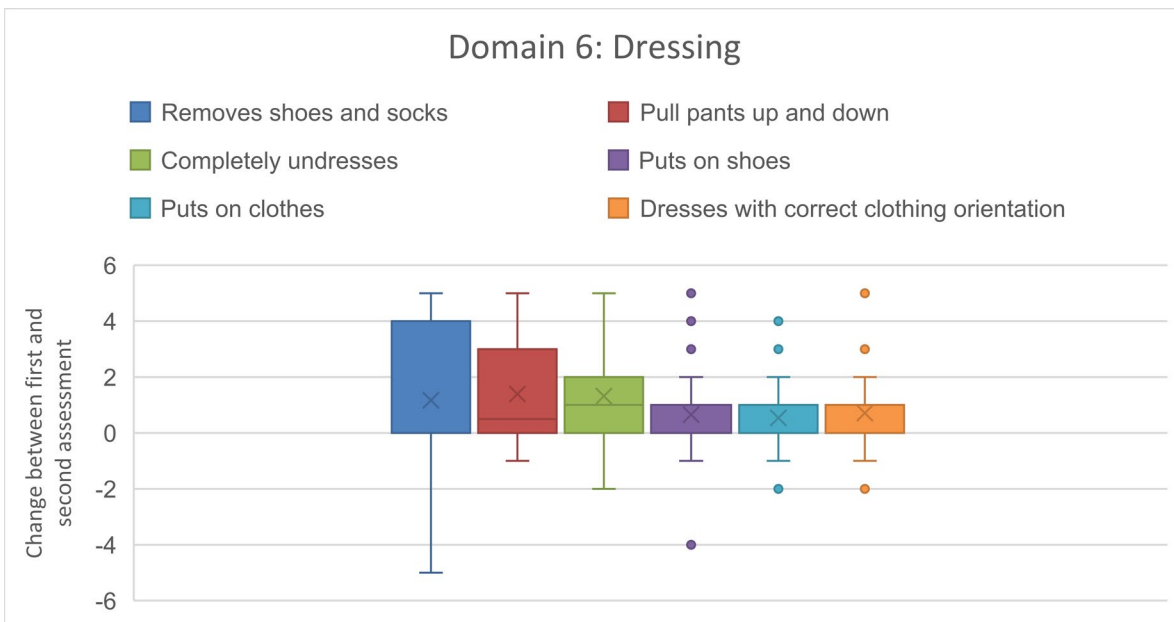
Domain 11: Understanding

Another important set of indicators is Domain 11 (Understanding) and Domain 12 (Use of language), as these are identified in the literature as a developmental area where autistic children are often delayed (Roberts and Simpson, 2019). As the data from Domain 11 indicates, children

showed consistent improvement in understanding, particularly 'responding to name being called' and 'responding to 'no' or 'stop''.

Domain 11: Understanding
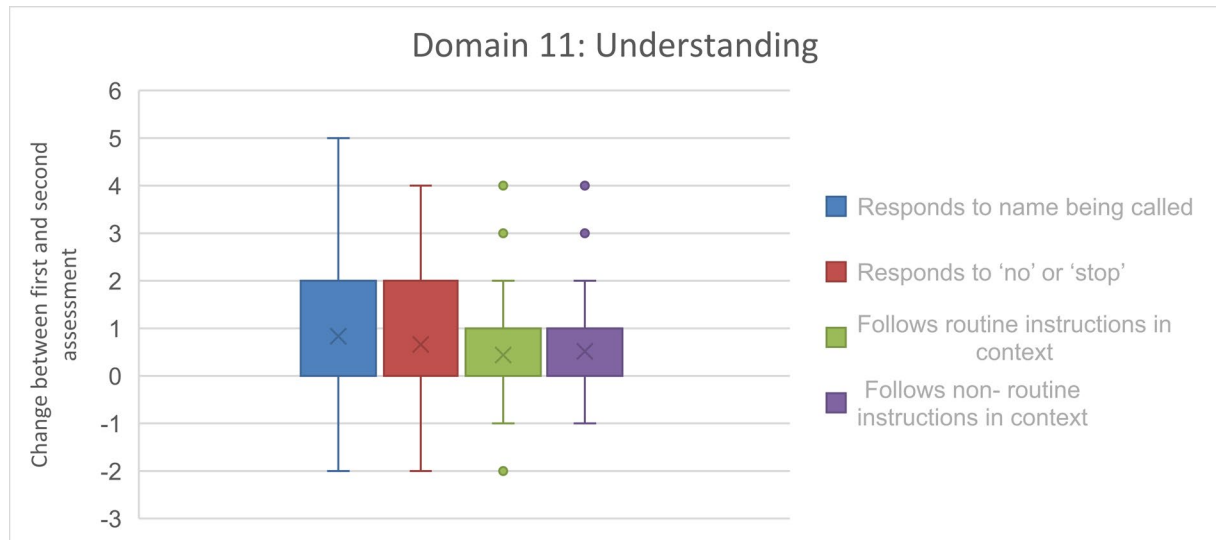
Domain 12: Use of language

For Domain 12, while the actual numbers of improvement do not appear high (none are above 1.0), the median for all six indicators are 0.6 or above, demonstrating consistent improvement across the domain. The graph below shows that across all the indicators, a number of children showed significant improvement, while a few children also regressed between assessments.

Domain 12: Use of language
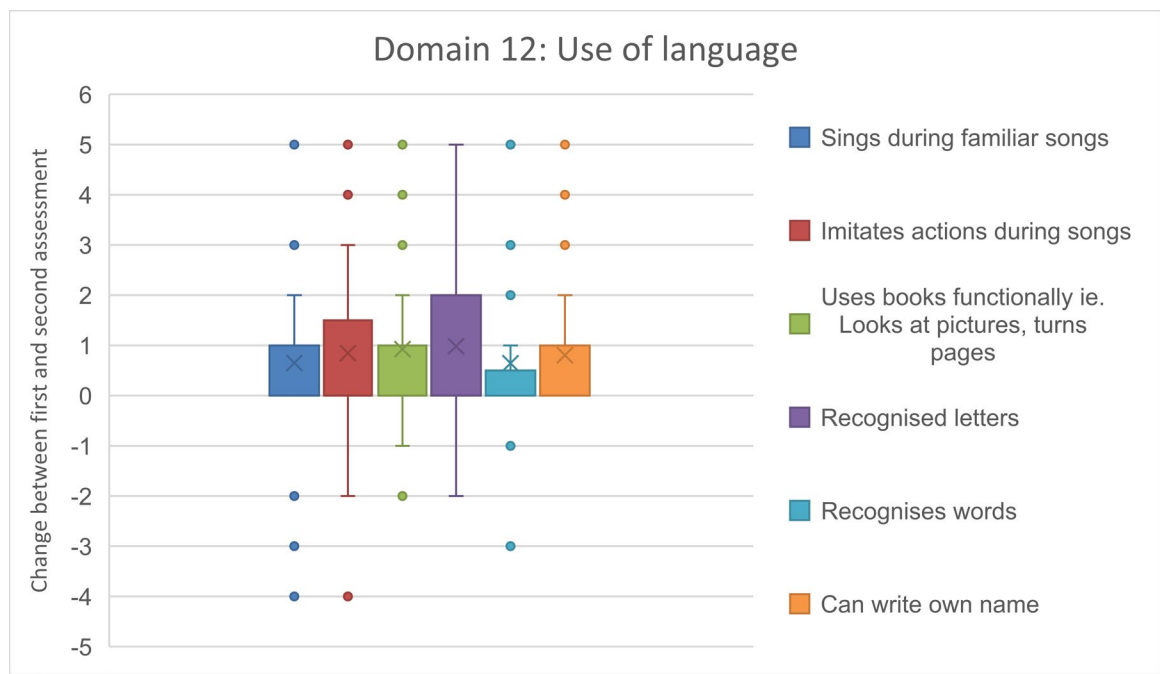
Domain 13: Purpose and Forms of Communication

At SDN Beranga, many methods of communication are used by the children, with type and complexity of use measured in the IEP Assessment Tool. For example, in the forms of communication section, non-verbal communication such as natural gestures and vocalisation is

included as well as verbal speech and the use of an Augmentative and Alternative Communication (AAC) device. A range of purpose that the child uses the form of communication for is also measured.

As noted in the Methods section, the scale for purpose and forms of communication was developed by the SDN team and adapted by the SPRC team for the purpose of analysis. The scale used for the other indicators could not be used for this domain because it is assessing more varied and complex forms of communication. The SDN team narrowed the **forms** of language into three distinct areas (early communication, basic language and complex communication):

➢ Early communication – pre-linguistic, natural gestures (e.g. pull by hand), sounds, can understand to an extent

➢ Basic language A (single words and learned phrases system) – one word, or possibly learned phrases

➢ Basic language B (Visual system) – an agreed upon system of communication such as key word sign, visual communication tools such as PECs or Objects of Reference, AAC devices, can be used as singular words with agreed upon meaning, learned phrases.

➢ Complex language – more spontaneous use of language that is able to adapt to conversation and topic, a two-way conversation.

When the identified form of communication was used for four or more purposes, it was reported as 'wide range'. If the child's form of communication was used for less than 4 purposes, this was classified as 'narrow range'.

Most children had either Early communication (n=37), or Basic language A (single word and learned phrases system) (n=21) at the time of their first assessment.

Figure 2: Forms of communication at first assessment

First assessment: Forms of communication

- Early communication
- Basic language A (single word or learned phrase)
- Basic language B (visual system)
- Complex language system
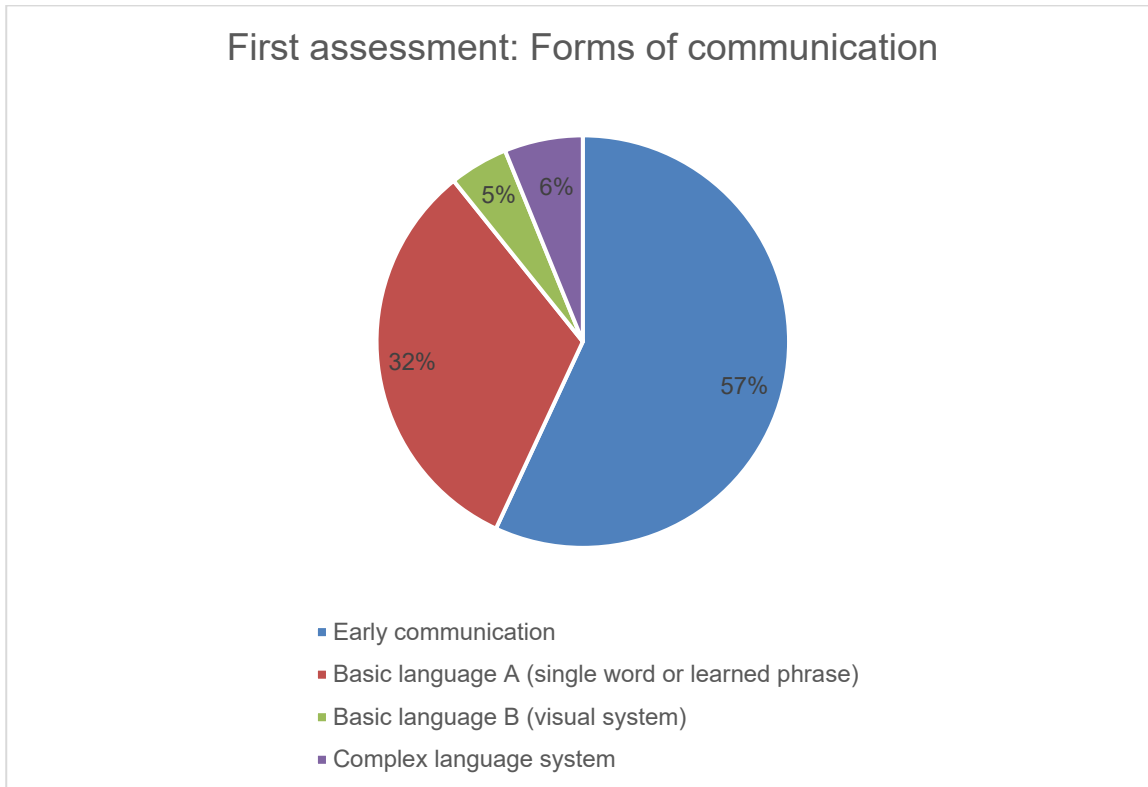
At the time of the second assessment, all children either stayed the same (n=43) or progressed on the scale from 1 to 4 (n=18).

Figure 3 Form of communication at second assessment

Second assessment: Forms of communication

- Early communication
- Basic language A (single word or learned phrase)
- Basic language B (visual system)
- Complex language system
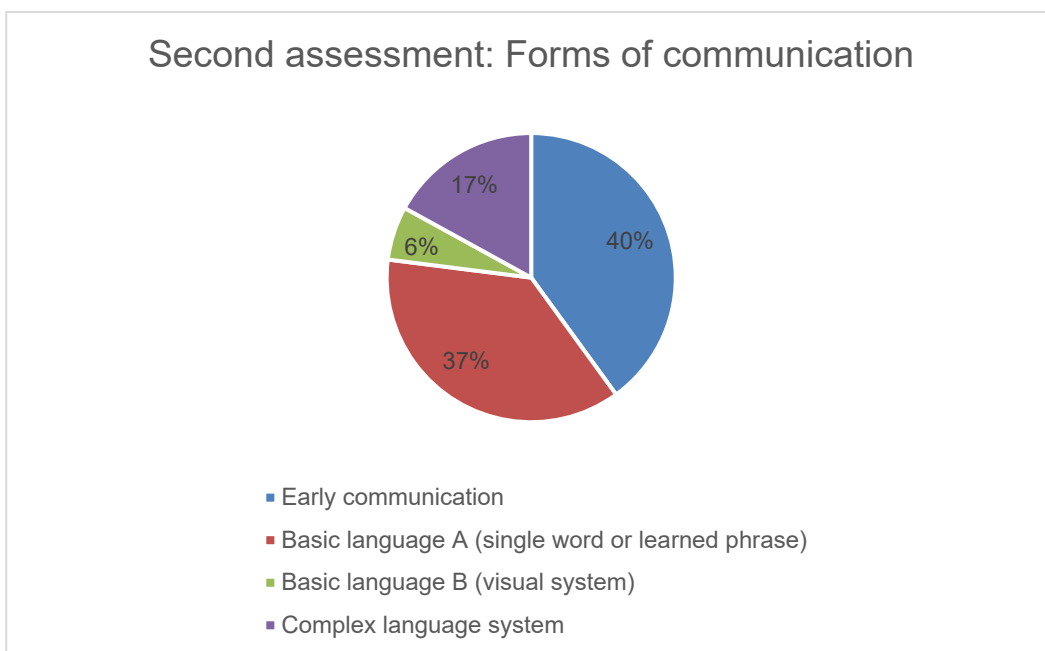
Figure 4, below, shows that of the 37 children (57 per cent) that showed Early communication at their first assessment, at the time of their second assessment:

- 67 per cent stayed at Early communication

- 22 per cent had progressed to basic language A (single word or learned phrases)

- 11 per cent had progressed to basic language B (visual system)

Figure 4: Early communication at first assessment: Progress at second assessment

Early communication at first assessment: Progress as second assessment

- Early communication
- Basic language A (single word or learned phrase)
- Basic language B (visual system)
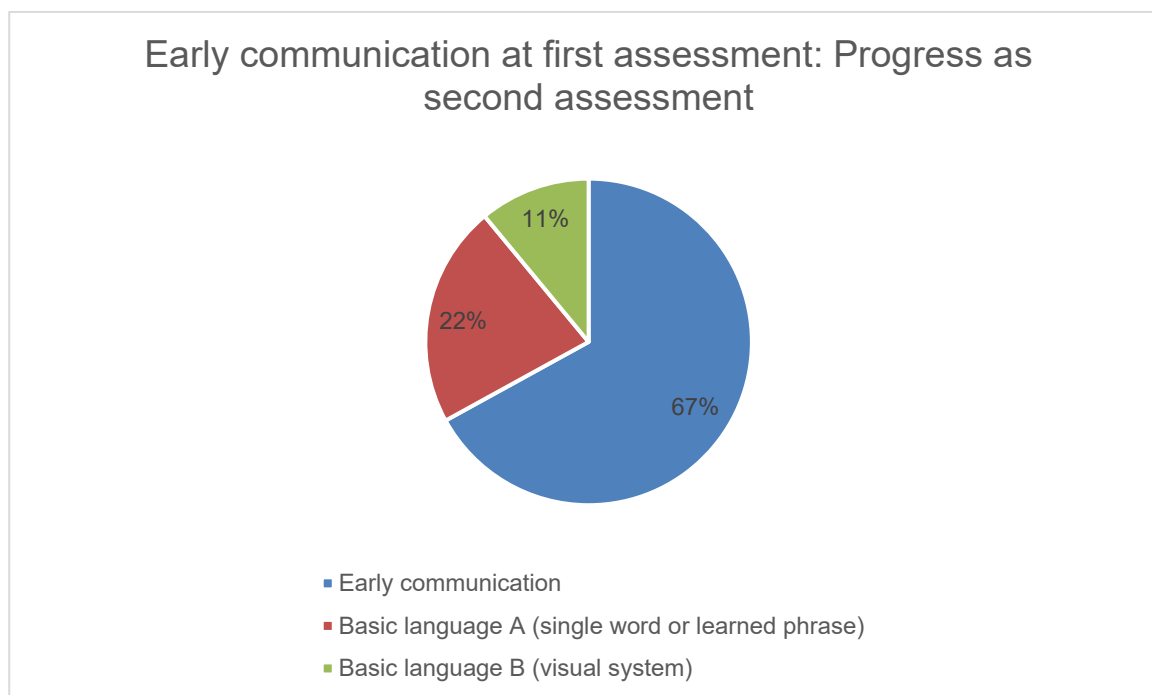
For the eight children that developed from Early communication to Basic language A (single word and learned phrases system), six showed a change from wide to narrow in their purpose of communication. This suggests that as children develop different forms of communication, they may take longer to develop this form of communication for multiple purposes.

The three children that had Basic language (Visual system) at their first assessment shifted to Basic language (single word and learned phrases) at the time of their second assessment. Of the three children that had Complex language at the first assessment, no change was recorded at their second assessment.

Similarly, children whose form of communication did not change were more likely to progress from narrow to wide range in their purpose of communication. Forty-three (66%) of the children showed no change in their form of communication between the first and second assessment. Seventeen of these children (40%) did however widen their range of purpose of communication.

Conversely, nine children's purpose of communication changed from wide range to narrow range; yet all of these children showed progress in their forms of communication:

- 5 from Early communication to Basic communication A
- 2 from Early communication to Basic communication B

- 2 from Basic communication A to Complex communication.

These findings for Domain 11 (Understanding), Domain 12 (Use of language), and Domain 13 (Purpose and Forms of Communication) show that children improved across the language and communication domains. This can be compared to other studies using standardised tools to examine the impact of an autism-specific model on children's outcomes. These findings may be consistent with Stephens et al.'s (2016) study that found small effect sizes on some sub-scales measuring language and communication (Stephens at al., 2016, p. 78). These findings show promising results of the effectiveness of SDN Beranga's preschool model, and also point to the benefit of using a standardised tool in the future to more effectively monitor improvement over time and in relation to other studies.

The analysis of IEP data shows that 9 children (14%) regressed on one or more indicators within the language domain. Studies have shown that language is an area that autistic children often regress in, with one systematic review (Tan et al., 2013) finding that approximately one-third of autistic children show some language regression. The authors emphasise the need for a standardised definition of autistic regression in order to better understand and measure language regression in autistic children. Another recent study from the United States analysed longitudinal data of children diagnosed with autism between ages 2 and 5 years. It found that, in the longer term, children with language regression "did not necessarily foreshadow worse developmental outcomes relative to those without regression" (Pickles et al., 2022). It also found that demographic and family characteristics, including family income and age of enrolment, were not correlated to language regression.

5.1.2 Understanding domains with less improvement

Domains 7 (Gross motor), 8 (Fine motor) and 9 (Emotions) are three areas where children appeared to make smaller gains, on average, between their first and second assessment. These could be areas for ongoing self-reflection by educators about both the interventions used, and also the reliability of the assessment process for these domains. As noted above, less improvement was expected to be seen for gross motor and fine motor indicators because children showed a higher average baseline with many children completing these tasks independently, or requiring verbal or visual prompts, at their first assessment.

Domain 7: Gross motor

For Domain 7, Gross motor, the data showed wide variation in improvement among the children. On average, children showed more improvement for 'paddles and steers a tricycle' and 'catches, kicks, throws and rolls a ball'. However, the first three indicators are at a very low level and therefore showed minimal improvement as most children were independently completing these skills at the time of initial assessment.

Domain 7: Gross motor
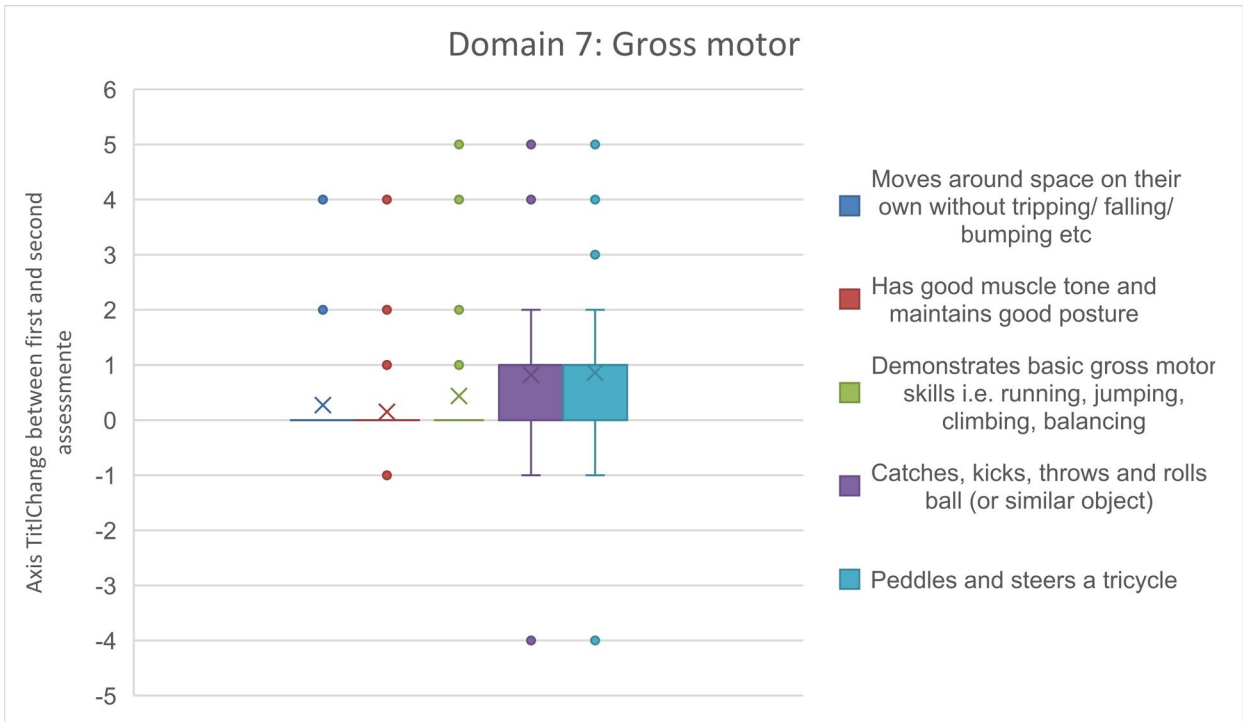
Domain 8: Fine motor

For Domain 8, Fine motor, the greatest average change was 'copies/traces lines/shapes' and 'holds pencil and/or paintbrush'. The range of change was large for 'aligns and stacks objects', 'uses finger or hand to manipulate objects' and 'uses two hands to manipulate objects', indicating variation in improvement/regression for these indicators. This domain also included a higher baseline with children frequently being assessed at baseline as independent across the first three indicators of this domain.

Domain 8: Fine motor
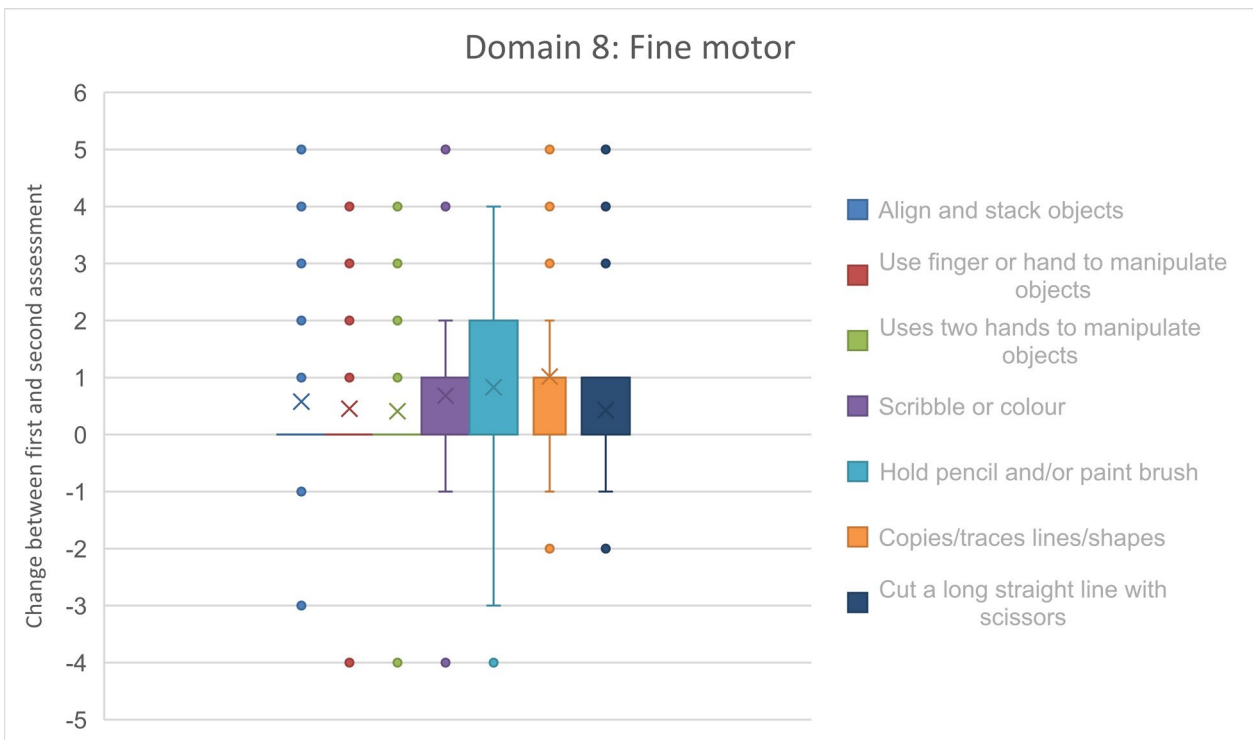
Domain 9: Emotions

Compared with the other domains, the average baseline assessment level for the Emotions domain was the lowest (along with Dressing, and Toileting and Hygiene). There was also lower average improvement for the indicators in this domain; however, the average change was still positive for all the indicators. The greatest improvement was for 'describes emotions in others', while the least was for 'self-soothes'. These findings are somewhat expected, as it is recognised in the literature that autistic children experience challenges when it comes to regulating their emotions (Cibralic et al., 2019). These results are likely to be illustrative of the varied ages and developmental stages of the participant group, as would likely also be the case with typically developing peers.

5.1.3 Understanding outlier results

In the domains below, children's change (improvement or regression) between the baseline and follow-up assessment tended to vary, with more outliers. This means it is more difficult to form conclusions about patterns of development for the children in the sample. There were also greater variations among indicators within each domain, meaning that children may have improved in one indicator within the domain, but less so (or not at all) in others.

Analysis of the data shows that, overwhelmingly, children improved in more indicators than they regressed (reflecting the average change being above zero).

Conversely, looking at the total sample of children, over one-quarter (n=17) did not regress in any indicators. Table 6 below summarises the total number of indicators that children regressed in, from a total of 83 indicators. As the table illustrates, only a small proportion (5%) of children regressed in more than 10 indicators. The highest number of indicators a child regressed in was 29 (or 35% of indicators). A further four children regressed in between 11 and 15 indicators. It also should be noted that there is not a consistent correlation between regression and attendance.

Table 6: Number and proportion of children that regressed, by number of indicators

	Did not regress	Regressed on 1-5 indicators	Regressed on 6-10 indicators	Regressed on 11 or more indicators	TOTAL
Number of children	17	31	12	5	65
Proportion of children	26%	48%	18%	8%	100%

Outliers were defined as improvement or regression of three or more levels on the 1 to 6 scale (-3 for regression and +3 for improvement). The outliers do not tend to be the same children regressing in multiple indicators, but rather a range of children regressing in a few indicators each. This shows that although some children did improve or regress in particular indicators, there were no children who were outliers on most indicators.

Almost all children (n=64) improved by 3 or more in at least one indicator, and many improved 3 or more levels in multiple indicators: eight children improved by 3 or more levels in 20 or more indicators (almost one-quarter of the indicators). Of these eight children, 5 were ASD Level 3, and five were 3 years old at the time of the first assessment. These findings may suggest that earlier access to high quality ECEC may be particularly beneficial for children with higher support needs.

Domain 2: Social skills

For Domain 2, Social skills, there was wide variation in the average baseline assessment. For the first indicator, 'engages in solitary play', the average baseline was 1.5 meaning that the majority of children were already doing this independently. Looking at the other indicators – where the average baseline assessment was between 3.2 (plays with other children in their space) and 5.1 (asks for a turn) – the average change was greatest for 'plays with adults' followed closely by 'joins in play with other children', 'waits for a turn' and 'asks for a turn'. Less improvement was reported for 'plays with other children in their space'. The data shows a wide variation in baseline assessment levels for this indicator, with most children showing no change. For the latter two, there was wide variation/range for children both in terms of the baseline assessment and the change reported. This compared with 'joins in play with other children', 'waits for a turn' and 'asks for a turn', where more children showed smaller improvements.

Domain 2: Social Skills

Legend:
- Engages in solitary play
- Plays with other children in their space
- Plays with adults
- Joins in play with other children
- Waits for a turn
- Asks for a turn
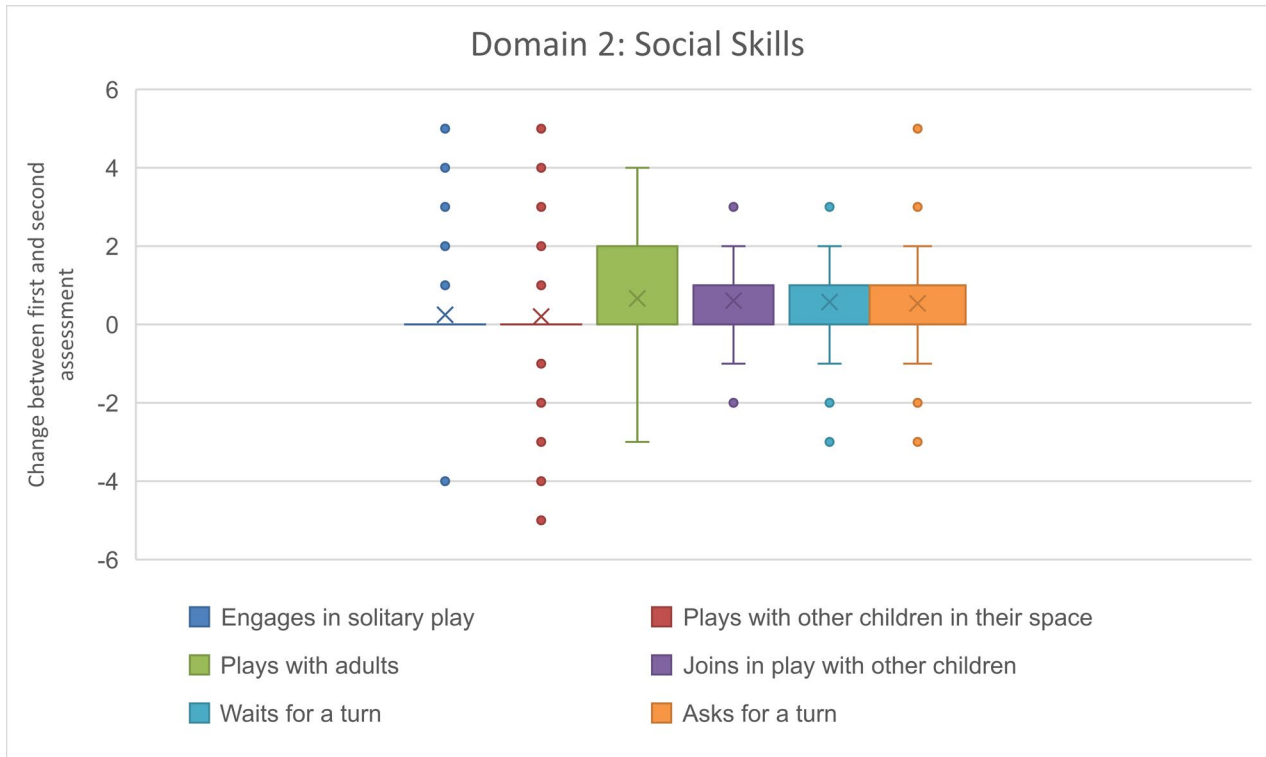
Domain 4: Mealtimes

For Domain 4, Mealtimes, the average change was the greatest for 'sits during meals' and 'feeds self with spoon/fork'. The results for this domain show there is a wide range of variability (and a number of 'outliers') for children across these indicators, with children improving and regressing by up to 5 on the scale of 'not yet performing' to 'performs independently'.

Domain 4: Mealtimes

Legend:
- Sits during meals
- Eats a variety of fruit/veg
- Eats a variety of meat/dairy/legumes
- Eats a variety grains/starches
- Eats a variety of textured foods (smooth, crunchy, chewy)
- Willing to try new foods
- Finger feeds
- Feeds self with spoon/fork
- Drinks from cup/drink bottle
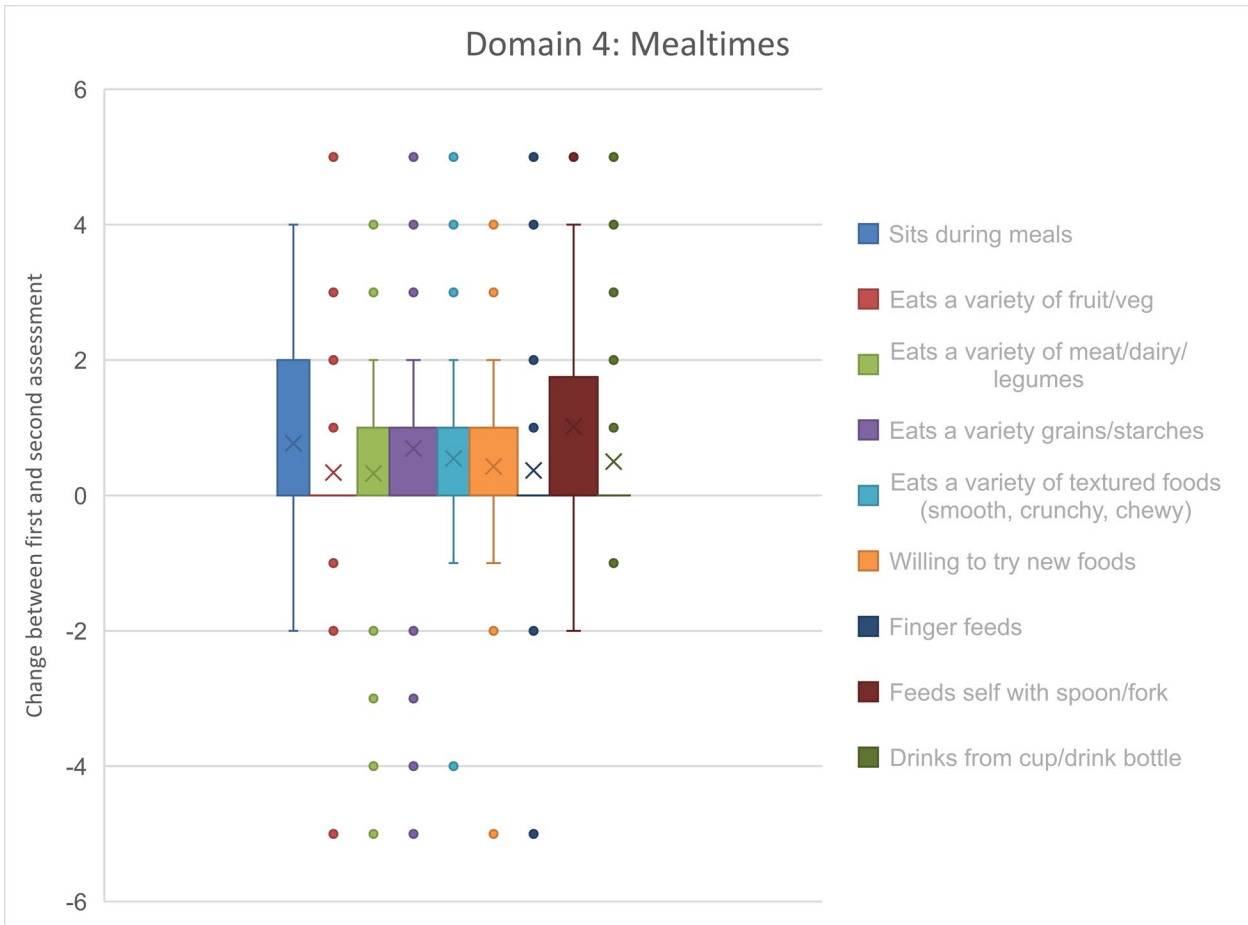
Domain 5: Toileting and hygiene

For Domain 5, Toileting and hygiene, the highest average change was 'sits on toilet', 'indicates awareness of wet or soiled nappy', 'notices when dirty' and 'urinates in toilet on timed schedule'. This data also shows that the range of change was high for a number of the indicators in this domain. As will be discussed further in the qualitative findings, this is a domain in which parents identified considerable improvement.

Domain 5: Toileting and hygiene

Legend:
- Indicates awareness of wet or soiled nappy
- Urinates in toilet on timed schedule
- Initiates for the toilet (takes self, requests)
- Thoroughly washes hands
- Notices when dirty
- Sits on toilet
- Voids bowels in toilet
- will follow all steps of toileting routine
- Wipes own nose

Y-axis: Change between irst and second assessment
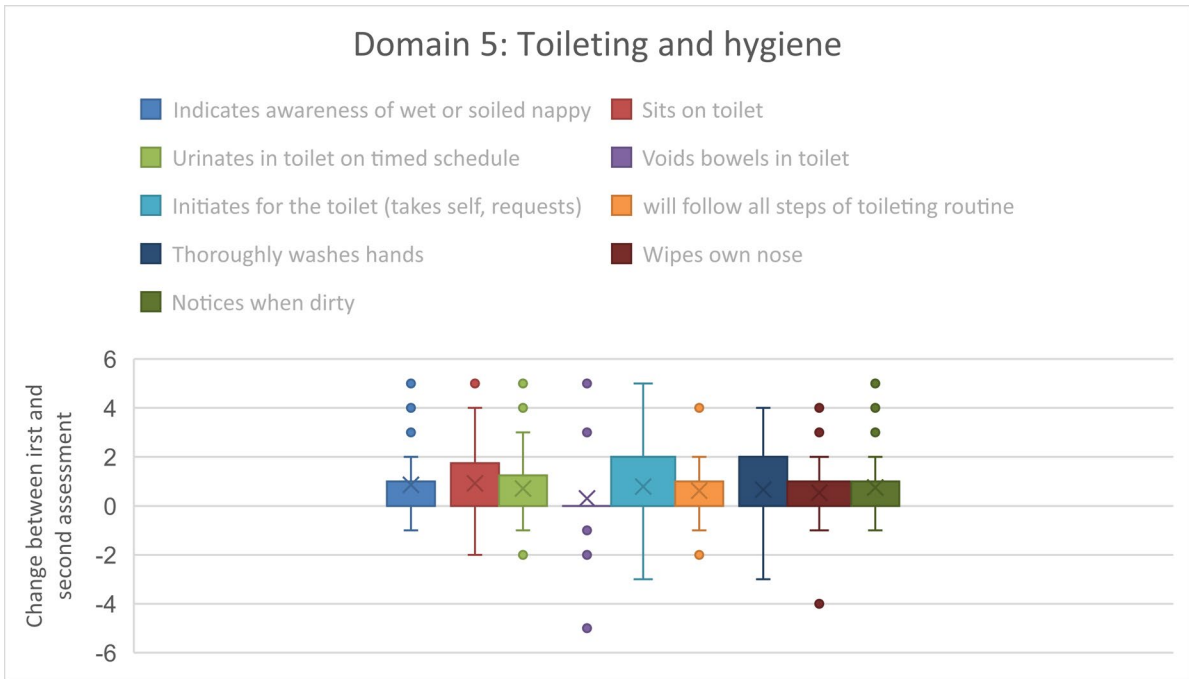
Domain 10: Play

For Domain 10, Play, the greatest improvement on average was seen for 'engages in pretend play on self', followed by 'sorts toys, matching objects', and 'pretend play with others'. Children improved less on average for 'plays with a variety of different toys' and 'engages in people play'. For some indicators, there was wide variation in improvement/regression indicating no change for many children for 'sensory play', 'engages in people play' and 'plays with cause and effect toys', and 'plays with a variety of different toys'. These are areas where the child often would be measured as being able to do independently at the time of benchmark.

Domain 10: Play

- ■ Sensory play with objects (mouths, feels, looks)
- ■ Engages in people play (smiles, looks, laughs)
- ■ Plays with cause and effect toys
- ■ Completes close ended activities (ring stacker, shape sorter, posting)
- ■ Plays functionally with toys e.g. pushes car, rolls ball, stacks blocks
- ■ Plays with a variety of different toys
- ■ Engages in pretend play on self (e.g. feeds self with spoon)
- ■ Engages in pretend play on others (e.g. pretend to feed adult, brush dolls hair)
- ■ Engages in object substitution e.g. tissue box as car, stirs with stick
- ■ Completes 5-10 piece insert puzzle
- ■ Sorts objects/toys into categories/ colours etc
- ■ Matches picture and/or objects
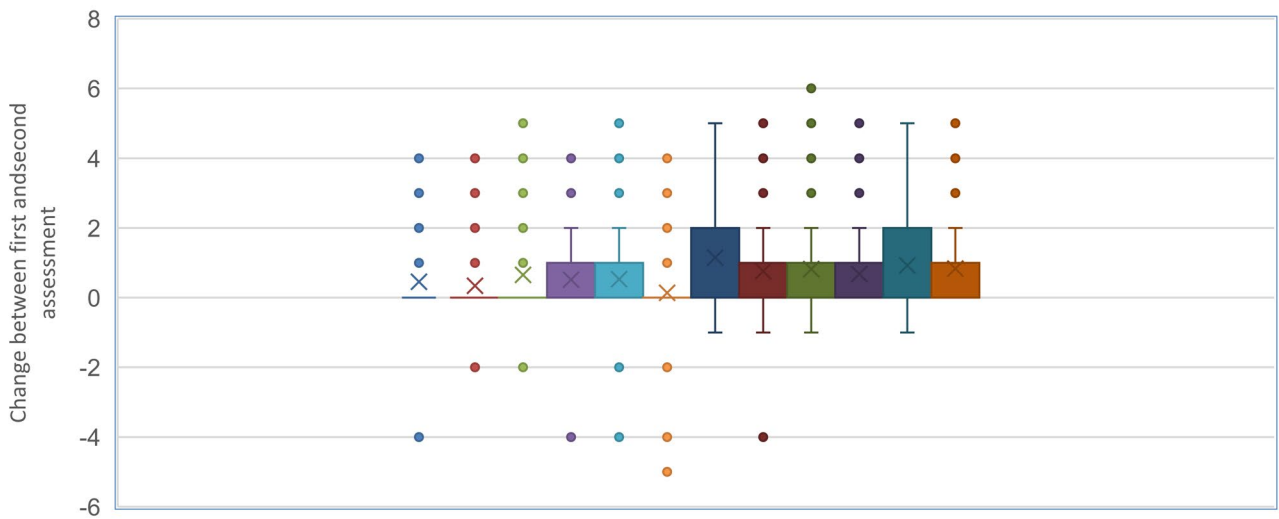
5.2   Child-focused analysis

This section focuses on the child-focused measures, looking at demographic and other characteristics. Table 7 below summarises the analysis of the child data records across the domains, by demographic and service characteristics. The table shows the *proportion of children in* each group who had *improved on the majority of indicators within each domain*. The figures that follow, in sections 5.2.1 to 5.2.9, present the findings by demographic and census characteristics.

Table 7: Proportion of children who improved on majority of indicators across domains, by demographic and service characteristics

	% of Sample	1: Transitions and routines	2: Social skills	3: Group participation	4: Mealtimes	5: Toileting and hygiene	6: Dressing	7: Gross motor	8: Fine motor	9: Emotions[1]	10: Play	11: Understanding	12: Use of language	13: Purpose & form of communication
All children		**39.3**	**36.3**	**34.8**	**22.7**	**27.3**	**53.0**	**9.1**	**19.7**	**25.4***	**25.8**	**34.8**	**34.8**	**53.0**
Child & family characteristics														
Gender														
Female	21	50.0	42.8	50.0	42.8	42.8	71.4	7.1	21.4	23.0	35.7	42.8	50.0	50.0
Male	79	36.5	34.6	30.8	17.3	25.0	48.1	9.6	19.2	25.0	23.1	32.7	30.8	53.8
Low-Income														
Yes	51.5	47.1	38.2	35.3	17.6	23.5	50.0	11.8	14.7	30.3	20.6	32.4	29.4	55.9
No	48.5	31.3	34.4	34.4	28.1	31.3	56.3	6.3	25.0	18.8	31.3	18.8	40.6	50.0
ASD Level														
1+2	26.1	41.2	41.2	47.1	11.8	29.4	70.6	17.6	29.4	33.3	23.5	47.1	41.2	35.3
3	73.8	37.5	33.3	31.3	27.1	27.1	45.8	6.3	16.7	23.4	27.1	31.3	31.3	60.4
Priority Access														
1	15.4	20.0	20.0	30.0	10.0	30.0	40.0	0.0	0.0	0.0	20.0	10.0	30.0	40.0
2	47.7	45.2	41.9	41.9	35.5	35.5	61.3	6.5	29.0	33.3	32.3	38.7	41.9	54.8
3	36.9	37.5	33.3	29.2	16.7	16.7	41.7	16.7	12.5	26.1	20.8	37.5	29.2	66.7

[1] *All domains except 9: Emotions, were calculated based on a total sample of 66 children. For Domain 9, the proportion was calculated out of 63 because three child records had missing values for this domain.

	% of Sample	1: Transitions and routines	2: Social skills	3: Group participation	4: Mealtimes	5: Toileting and hygiene	6: Dressing	7: Gross motor	8: Fine motor	9: Emotions[1]	10: Play	11: Understanding	12: Use of language	13: Purpose & form of communication
Age														
Age 3	61	49	41	41	26	28	56	10	23	23	23	38	36	54
Age 4	39	28.0	32.0	28.0	20.0	28.0	52.0	8.0	16.0	28.0	32.0	32	28	56
Service variables														
Mainstream ECEC attendance														
Yes	67.7	34.1	31.8	34.1	27.3	25.0	50.0	4.5	22.7	23.8	29.5	34.1	34.1	54.5
No	32.3	47.6	38.1	38.1	19.0	33.3	57.1	19.0	19.0	40.0	19.0	38.1	38.1	42.9
Attendance rate														
Low	28.3	47%	42%	47%	26%	26%	53%	11%	26%	32%	26%	47%	47%	42%
Medium	38.9	23.1%	38.5%	19.2%	11.5%	26.9%	46.2%	11.5%	19.2%	33.3%	23.1%	34.6%	26.9%	69.2%
High	32.8	50.0%	27.3%	40.9%	31.8%	27.3%	59.1%	4.5%	18.2%	19.0%	27.3%	22.7%	31.8%	40.9%
Duration between assessments														
4-8 months	59.7	37.8	32.4	32.4	21.6	24.3	43.2	8.1	13.5	25.7	27.0	32.4	29.7	51.4
9-22 months	40.3	42.3	42.3	34.6	26.9	34.6	73.1	11.5	23.1	24.0	26.9	38.5	46.2	57.7

5.2.1 Gender

Across almost all domains, girls improved on average more than boys. The low number of girls in the sample is a limitation of this finding; however, this reflects the enrolments at SDN Beranga which has always had a higher proportion of boys.

Figure 5 Proportion of children who improved on majority of indicators within domain, by gender
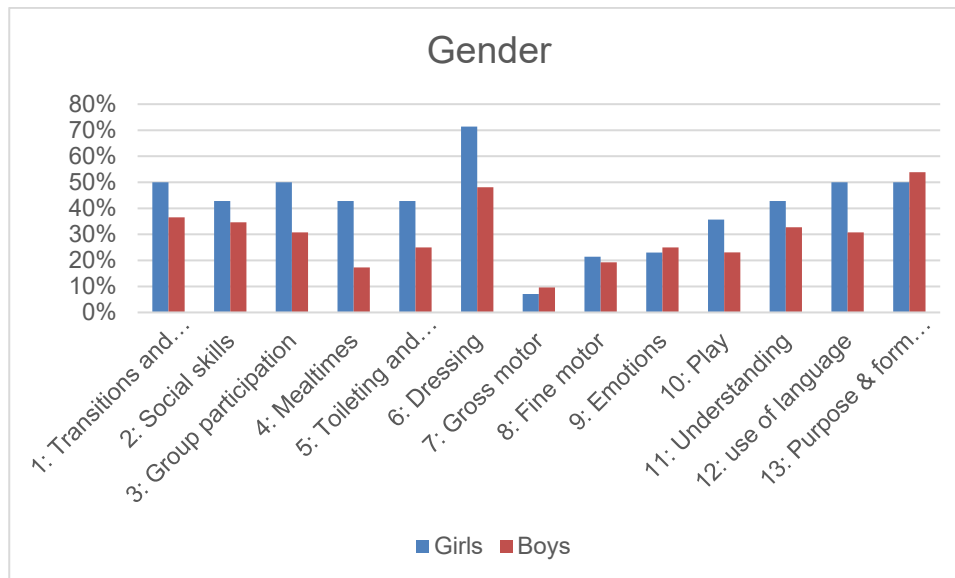
5.2.2 Income

There were no noticeable trends in improvements between children from low-income families compared to other families. Children from low-income families improved more on average for some domains (Transitions, Emotions, Understanding), while children from other families improved more on average for 'Play', 'Mealtimes', and 'Use of language'.

Figure 6 Proportion of children who improved on majority of indicators within domain, by income
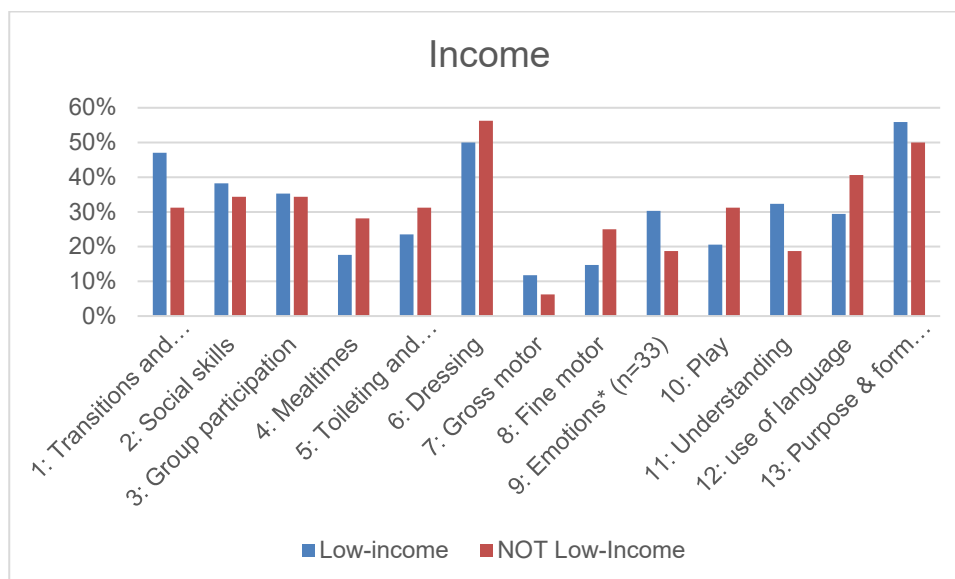
5.2.3 Mainstream ECEC enrolment (dual placements)

There were no identifiable trends in improvement in children based on whether they also attended a mainstream ECEC service in addition to SDN Beranga (dual placements). Children who did not attend another ECEC appeared to improve more on average on the indicators in the domains 'Emotions', 'Gross motor', and 'Transitions'; whereas children who also attended a mainstream ECEC improved more in 'Purpose and form of communication'.

Figure 7 Proportion of children who improved on majority of indicators within domain, by attendance at mainstream ECEC
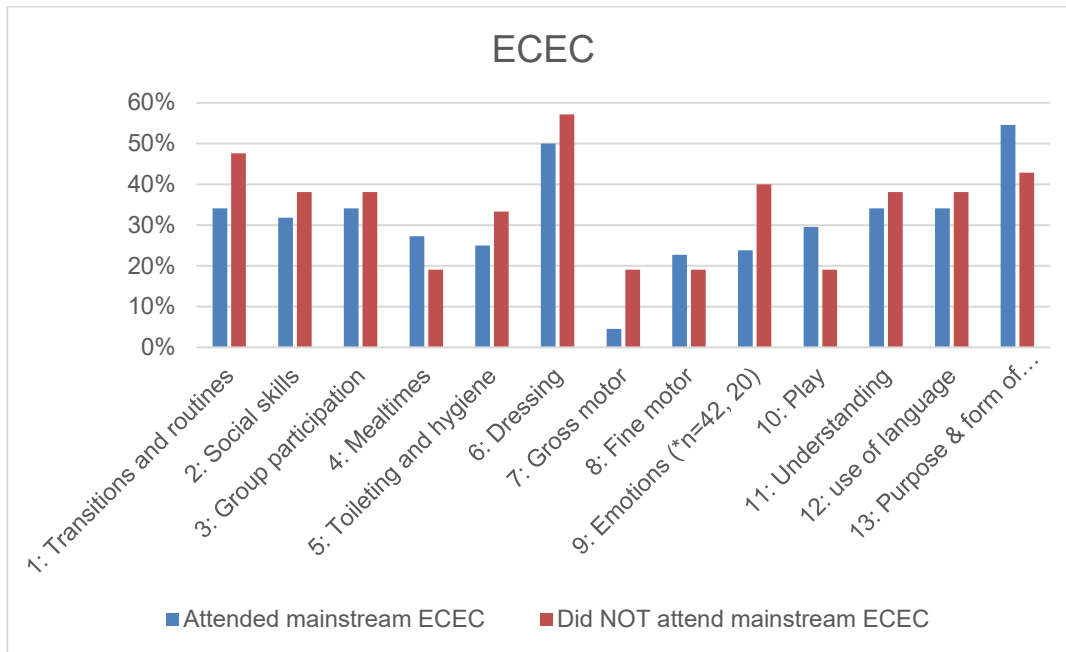
5.2.4 Language background other than English

There was no consistent trend between children from a language background other than English (LBOTE), and those who speak English at home. There were, however, two domains—'Dressing' and 'Purpose and form of communication'—where children from a LBOTE appeared to improve on average more than their peers from English speaking backgrounds. They also improved more on average (but to a lesser extent) in 'Understanding', 'Fine motor', 'Play', 'Use of language', 'Group participation' and 'Toileting and hygiene'.

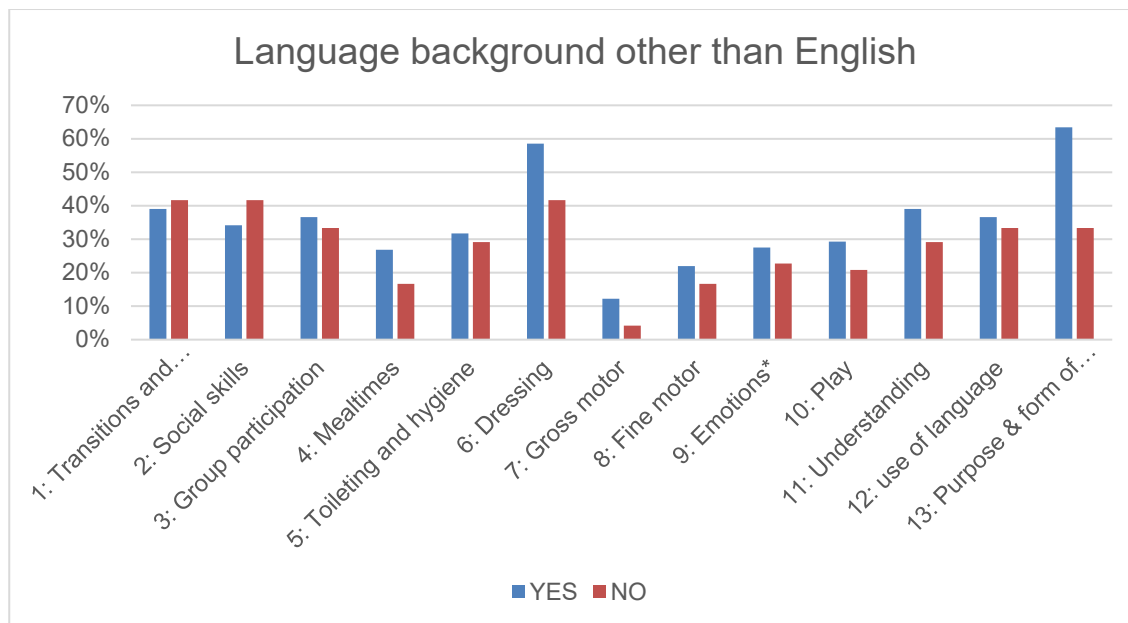**Figure 8 Proportion of children who improved on majority of indicators within domain, by language background other than English**

5.2.5 Age

As noted earlier, the literature indicates that age at intervention makes a difference for language development. In order to test whether this was the case for the Beranga sample, we looked at the age at first assessment. This showed that children who were assessed at three years old did show greater improvements between their first and second assessment, compared with the four-year-old children. The difference was especially significant for Domain 1 (Transitions and Routines), Domain 2 (Social skills) and Domain 3 (Group participation). It is important to note that three-year-old children are enrolled only 1 day/week compared to 2 days/week for four-year-old children, but the three-year-old cohort still improved more on comprehension and language. Some of the children included in the three-year-old cohort may have moved to 2 days/week between the first and second assessment. This finding aligns with Vivanti and colleagues' (2019; 2016) findings that for the Early Start Denver Model (ESDM), children who started intervention at a younger age showed greater gains in verbal cognition. However, as noted in previous sections, the higher rate of improvement could also reflect the older children having a higher baseline level at first assessment. As expected, for the large majority of indicators, three-year-old children required more assistance to complete the activities or tasks.
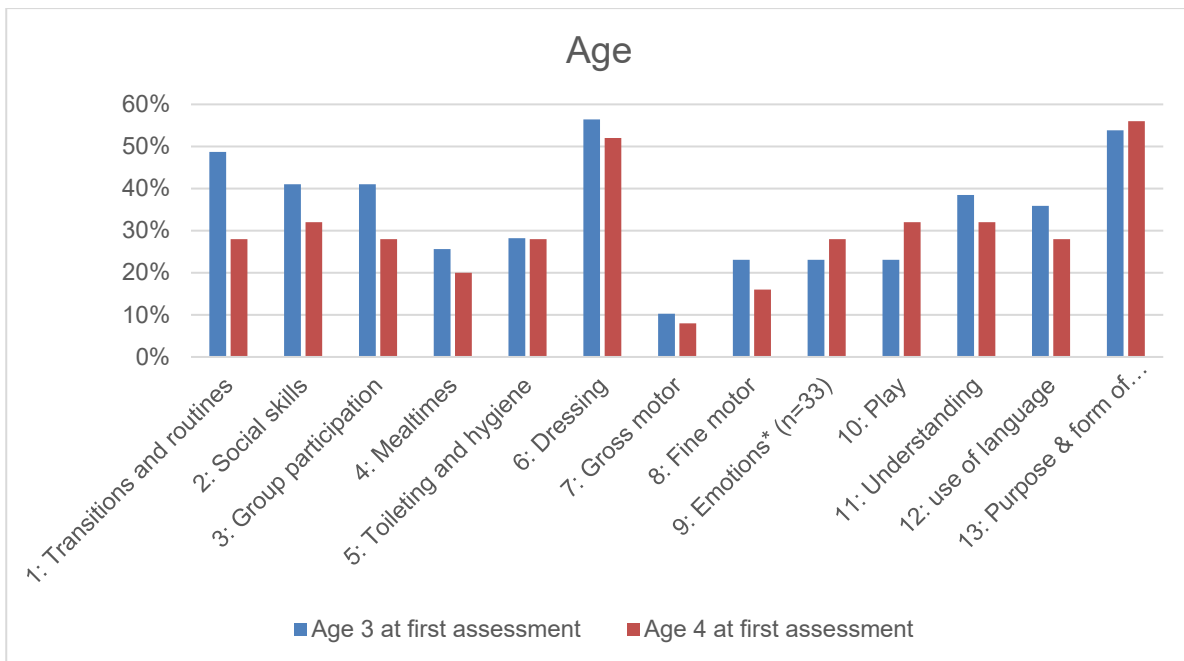
5.2.6 ASD Level

Due to the focus on children with higher support needs, most of the children at SDN Beranga have a Level 3 ASD diagnosis (47 children, 71%). In order to analyse the data in terms of ASD level, the children diagnosed as ASD Levels 1 and 2 were combined because of the low number of children in Level 1 (one child). The results indicate that children in ASD Levels 1 and 2 improved more on average across most of the domains, with the exceptions being 'Mealtimes' and 'Purpose and form of communication'. It is noted by SDN Beranga that a limitation of the assessment tool is that it is not designed to assess higher levels of language expression, meaning it may not fully capture developments of children in ASD Level 1.

Figure 9 Proportion of children who improved on majority of indicators within domain, by ASD level
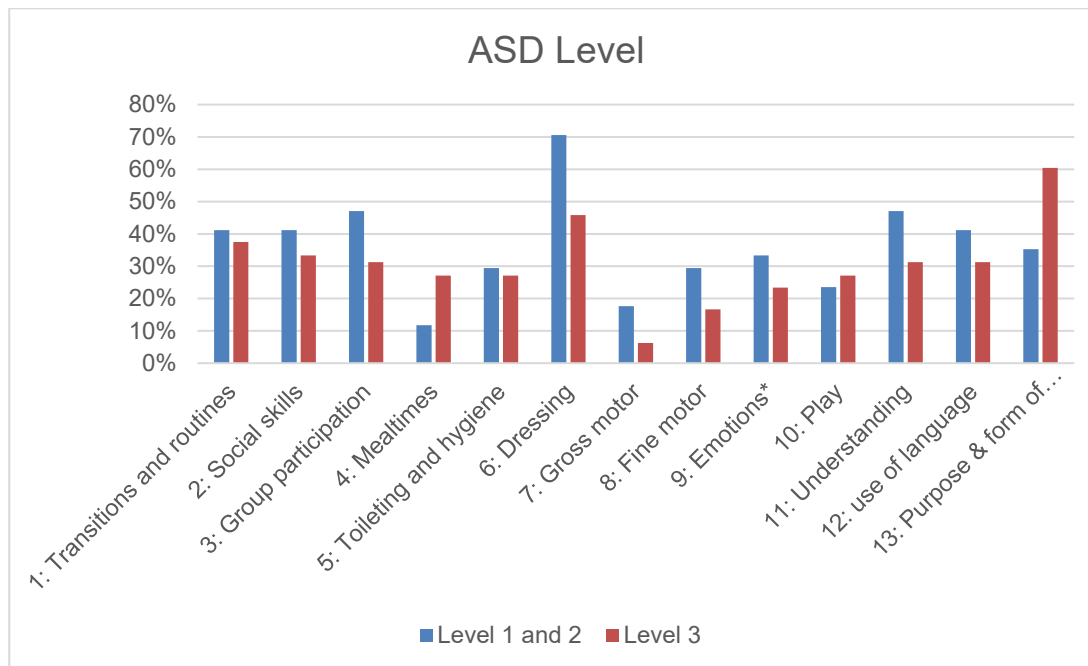
5.2.7 Priority access

The findings from our analysis suggests that children in priority group 2 (based on socioeconomic status and vulnerability) appeared to improve more on average, across most of the domains (except Purpose and form of communication), compared with those in priority access group 1 or 3.

Figure 10 Proportion of children who improved on majority of indicators within domain, by priority access
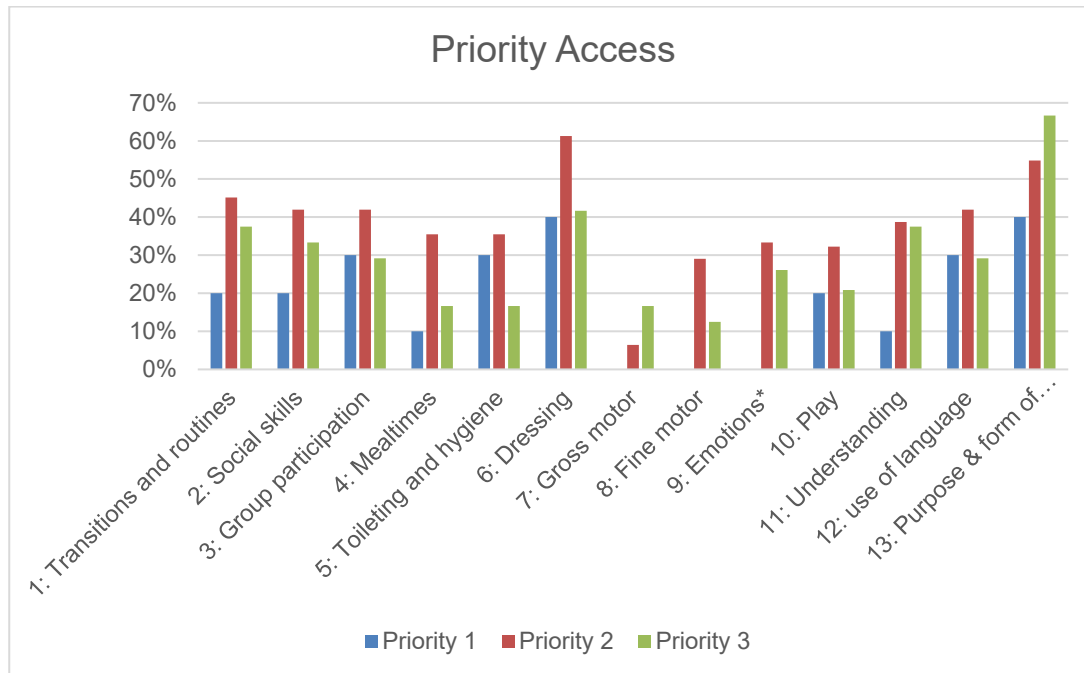
5.2.8 Attendance rate

The attendance rates are calculated as a proportion of total enrolment days, meaning that 3-year-old children may have a high attendance rate based on their one day per week enrolment, but were still attending much fewer days than a 4 year old with a low attendance rate based on being enrolled 2 days per week. The results for children with higher attendance rates improved slightly more on 'Dressing', 'Transitions' and 'Mealtimes'. However, there is no clear trend in improvement according to attendance rates.

It is important to note that the data is not broken down by age, which determines how often (1 or 2 days per week) a child is enrolled at the service. Four-year old children attending 2 days per week would be attending 12.5 hours/week, while three-year old children would be attending 6.25 hours per week. This service model was developed to ensure SDN Beranga reached the greatest number of children that would benefit from an autism-specific preschool whilst also being financially viable. This compares with research that suggests autistic children benefit from intensive (15-25 hours/week) ASD early intervention regardless of whether they are learning together with typically developing peers, or in an autism-specific setting (Gendera and Katz, 2019, p. 7).

Figure 11 Proportion of children who improved on majority of indicators within domain, attendance rate
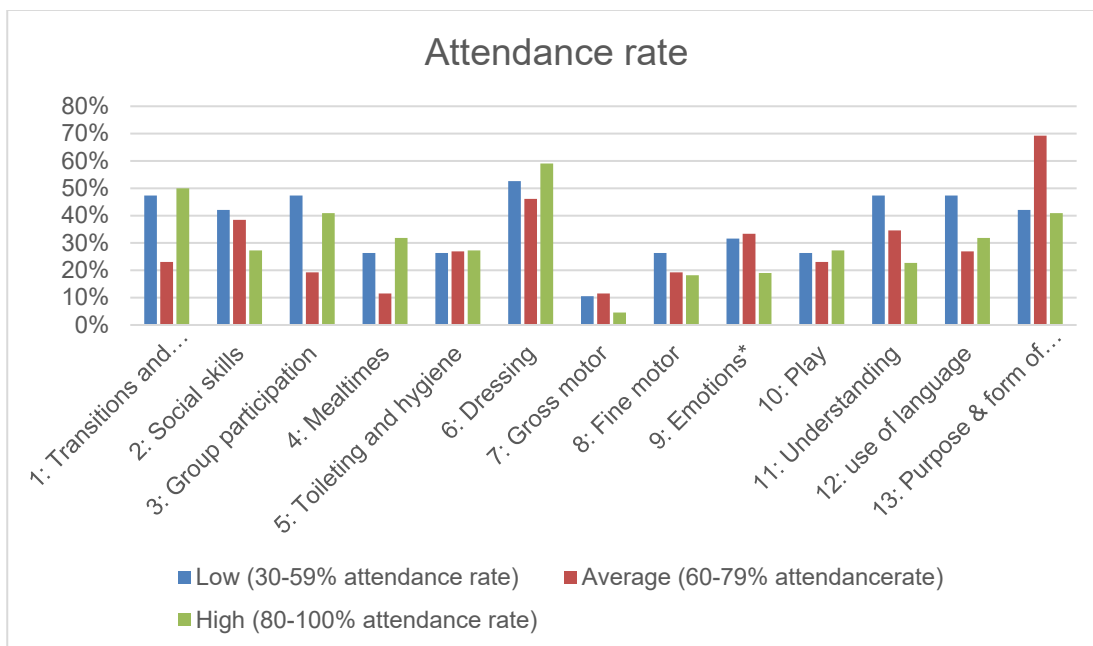
5.2.9 Duration between IEP assessments

The results showed a clear relationship between the number of months between assessments and the average improvement. This is reasonable given that a longer time between assessments would require a longer period of enrolment at SDN Beranga as well as natural development over time. Children who had a longer time between assessments (9 months or more) showed on average greater improvement across all domains, compared with those whose assessments were 4 to 8 months apart. It is difficult to examine this finding in relation to their attendance due to the complexity of the different ages and number of days of enrolment.
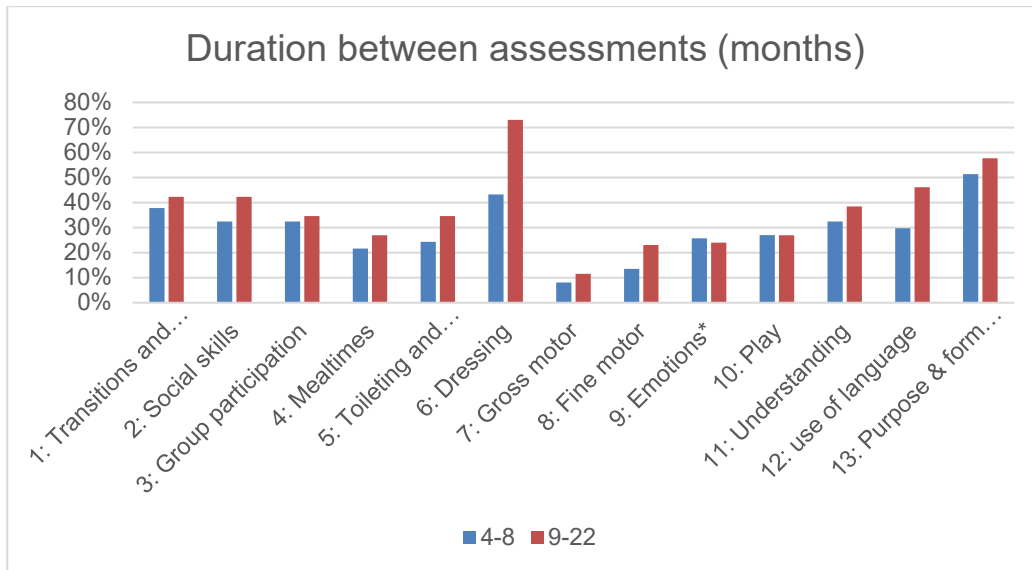
6 Key themes and insights from qualitative data

This section reports on the key themes and findings that have emerged from analysis of the data. Building on the analysis undertaken of the family data for the interim report, the findings are presented across a number of themes. Each theme considers data from each of the methods used, recognising that data from some methods contribute more to our understanding of some themes than others. For example, discussion about children's social and emotional development relies more heavily on analysis of the child data records, and is complemented by findings from the interviews, survey and literature. Conversely, findings about communication, planning and service viability are informed more so by the qualitative data, and complemented by policy and literature review.

6.1 Children's learning and development

Children attending SDN Beranga present with a wide range of learning needs, including children who are non-verbal and children with challenging behaviours. Overall, parents interviewed reported that they had witnessed improvements in their child's social and cognitive development, in some cases significant changes. Many parents felt that these changes were a result of, or facilitated by, their child's attendance at Beranga in combination with working with dedicated specialist therapists. In this section, we present findings from the analysis of child data records, complemented by findings from the family survey and interviews.

In both the survey and interviews, the pedagogical approach was identified as central to parents' decisions to use, and satisfaction with, SDN Beranga. In the survey, parents were asked "Thinking about what's important to you when choosing a preschool or early childhood service, please rank in order what is most (1) to least (5) important." The large majority (22/31) indicated that autism-specific programming was the most important aspect when choosing a preschool for their child, followed by cost (6), and 1 for each of the remaining aspects, respectively.
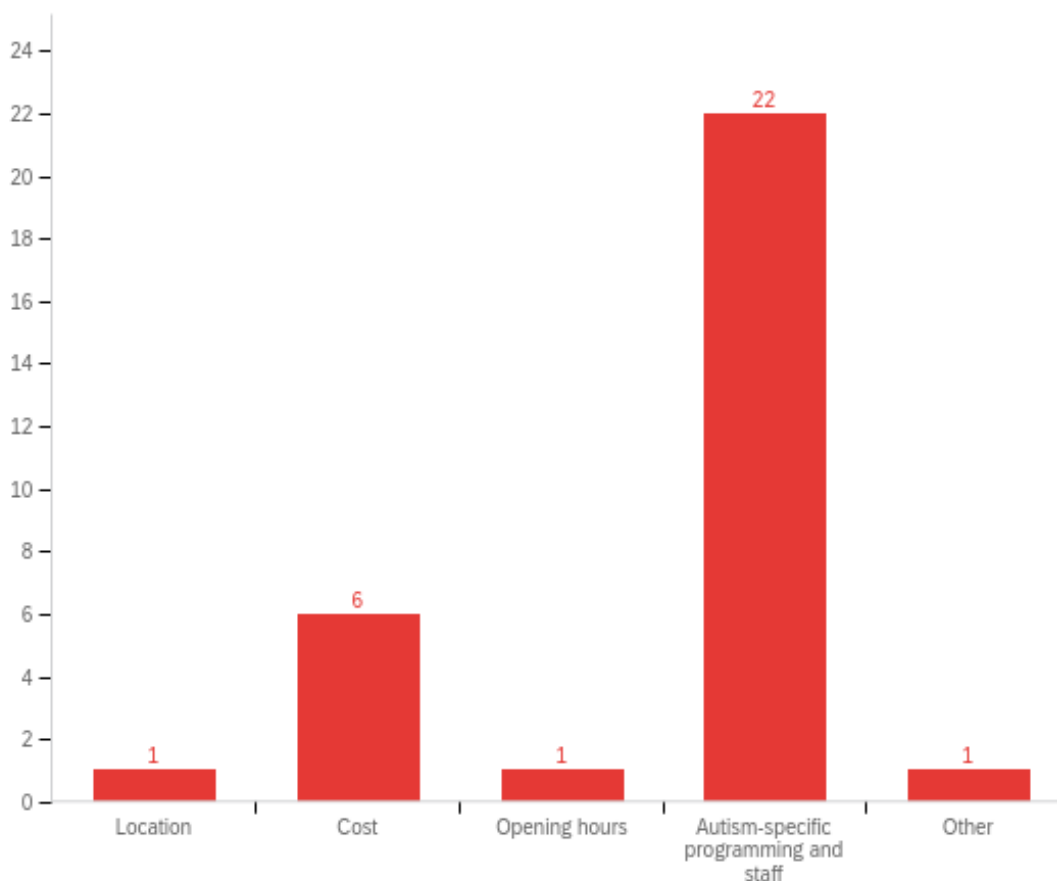
Figure 12 Most important aspect when choosing a preschool or early childhood service

This finding is not surprising given the growing focus on the importance of early intervention for autistic children and the government's focus on access to services in Australia and elsewhere (Adams et al., 2019). If families also have access to NDIS funding, SDN Beranga offers a unique model where children can attend preschool and receive NDIS-funded speech and occupational therapies on site using SDN therapists.

6.1.1 Verbal and non-verbal communication

Parents with a child attending Beranga for a year or longer noticed significant changes in children's communication abilities. This is consistent with the child data record findings that show children who had a longer duration between IEP assessments (and likely had attended longer) showed greater improvement on Domains 11 (Understanding), 12 (use of language) and 13 (Purpose and forms of communication). All parents we spoke with indicated their children had improved their abilities to express their intentions and communication with their family, caregivers or peers. For some children, this meant they had started to use spoken language or were more fluent in this.

> My son is 4 and half […] One thing that really changed is his receptive skills …that has skyrocketed this year. Back then [a year ago] he wouldn't understand whatever you're saying. He got confused, he didn't listen. He just gives up to whatever command or instruction you say. But this time around, everyone's telling me - Beranga, mainstream or whoever - his perceptive skills are very good. You say, "Go the toilet, go here, sit here, stop what you're doing, playtime". Simple words and he can follow them now. He can just click on and understand straight away. We are still

working on the expressive skills, he can't say "hey I need to go to the toilet". (Peter, parent)

Yes, [my daughter] started last year, the first week of February. Before she was not using any words, now she is using some words. She is going Mon/Tues Beranga and Thurs/Fri at a [mainstream] childcare. At SDN they know how to do activities with children with autism. Yes, and they also use pictures to communicate with her. In the [mainstream] childcare it is different. (Deepa, parent)

My son could read a bit at 2.5 years, […] but he couldn't express himself, he couldn't tell me what he needed or wanted. Most days he would cry, or pull my hand, grab my hand [to show me the food he wanted], use my hand as a tool, and try to take me there. But obviously, I had no clue what he was talking about, what he was trying to tell me. […] Now I understand him better when he wants something. (Belinda, parent)

A year ago, before we started, my children they were not even responding to their names. I would say [their name] one year ago, they did not know that it was about them. Or other people's name, like their dad, who is their dad or mum. They were not responding. But now they can identify everyone, whoever is with them in the school, they can tell them goodbye or good morning and they can give them a hug. […] They are also getting some sort of understanding that, "Yes, we need to behave this way. We need to be calm, and we need to talk to people." Their eye contact has improved as well, they can watch someone and respond to you. The problem with them was that they were always too fast. (Samir, parent)

Findings from the literature are mixed about whether autism-specific programs have a positive impact on children's language and communication (Stephens et al., 2016). Use of standardised tools and scales would improve the capacity for SDN to assess whether the results from the child data records, as well as parents' perspectives, are valid and reliable measures of their language skills.

6.1.2 Emotional development and connection

Parents said that the developments in their child's ability to understand, communicate and express themselves positively impacted on their emotional development and other sometimes challenging behaviours. Parents assumed this was because their child was now better able to express their needs and be understood by others, which meant they were less frustrated. Parents reported that children had improved their understanding of their own emotions and that they had adopted different mechanisms to respond to their child's needs.

SDN has helped him in all the aspects of ... to work through all his weaknesses and strengths. Emotionally, yes, of course they have a lot of visual cards to help ... visual things to help him with recognise his emotion and act accordingly. As well as given us the strategies to calm him down, to find things that makes him happy when he is having a tantrum. (Belinda, parent)

As soon as we started with Beranga, it's been amazing! [My sons] changed dramatically, the changes that they achieved are amazing. They're actually now ... [name 1] is actually starting to talk. He can say two to three words per sentence. He's actually asking for stuff now. My second child is saying words now. He still chucks a tantrum when he doesn't get what he wants, but he's actually not hitting his head anymore. He used to hit his head on

the floor. He's not doing that at least. There's a lot of things he's not doing now, that he used to, so there's a lot of changes that's happening. […] They couldn't call me [by my name]. They used to just drag me by my hand. Now, they can say "Mum", or say "Dad", say their siblings' name. They can say, "I want to eat, or just "hungry". It's amazing! (Laila, parent)

One of the characteristics of autism is difficulty maintaining eye contact. There are a variety of reasons for this as described in the literature, including but not limited to the facial expressions and eye area being over-stimulating leading to higher levels of arousal in autistic children. This means it is not the preferred method of communication as they cannot process the auditory message as well as interpret the facial expressions (Bal et al., 2010). Additionally, it is not as socially motivating for autistic people to use eye contact (Trevisan et al., 2017), and difficulties making connections and reading other people's faces mean it is more challenging for autistic children to perceive, copy or follow people's intentions (Griffiths et al., 2017). Parents who said their child was non-verbal felt that they had made progress in their responsiveness to other people, such as making eye-contact and observing faces. Small developmental changes were perceived as great gains.

I see changes. Currently my child is non-verbal, but before she had no eye-contact at all. And now she does look you in the face. And she goes to preschool [Beranga] and she looks happy, and she enjoys their playing, especially the messy play. (Bahja, parent)

The quote above, and interviews with other families, demonstrates that a number of families observed gains in their children's emotional development and regulation. In order to ensure privacy, the quantitative data records were not linked to the family interviews, and therefore we are not able to report whether the families' reports of improvement are consistent with the assessments of their child using the IEP Assessment Tool.

6.1.3 Social development and independence

Many parents reported that their child had made a lot of progress in their social development. Children developed a range of motor and cognitive skills that are often taken for granted in typically developing children. Looking at the child data records, we can see that Domain 2 (Social skills) and Domain 3 (Group participation) had higher proportions of children (36.3% and 34.8%, respectively) who improved on the majority of indicators within those domains, compared with other domains. Children in ASD Level 1 and 2 improved more on these domains (41% and 47%, respectively) compared with children in the ASD Level 3 group.

Parents spoke of their child's increased interest and ability to engage with toys, engage with other people around them including peers, paying attention during activities, playing in groups, listening and following verbal and non-verbal cues.

[When we started] my son, he didn't know how to play in the park. He didn't know how to use any of the equipment. He would just wander around in the park and walk around. No social communication with peers, no participation in the group activities in his childcare. He was going to another mainstream childcare at that time. So yeah, that's how he was at the beginning. With [the Beranga educators] they were working on the communication and the turn-taking and playing with peers, practising those skills, they really helped me with it ...

the educators were really modelling that stuff for him in the classroom, which I think really helped him. […] As I mentioned, socially with SDN and the peer group obviously, they helped a lot. These are issues are more or less the same with children with autism. They have social communication issues. (Belinda, parent)

Just he's mature. I don't know, he's come out of his shell a lot more. He doesn't mind sitting with you. Before, he wouldn't sit with you at all. He would keep running around, all the time. […] He doesn't like people in general. So, to even have someone sit next to him, it's a *big milestone*. I think he understands more now. It's hard to explain. He is more interactive [with peers and his siblings], that's the biggest thing he's gained. (Connie, parent)

Parents perceived that the inclusive, flexible and child centred approach (Input and Processes in Table 1) at SDN Beranga played an important role in helping their child to develop play, social and motor skills, and feel part of the group.

When we started with Beranga, it was a huge change for [my son] because they wanted to include him! It was huge for him to then have to actually do activities with the other children. […] So at first he was like, "I don't want to do this" so he kind of pushed back a little bit. […] But they're very accommodating to painting. Now because he started doing these group activities, and he enjoys them, he started to sit at the tables and chairs, like for dinner, he actually sits down now and eats with us. That's *big* for him. […] But I think that he's doing it very well. He's still very much like a loner child, a child with autism. He likes to be on his own and he likes to do his own thing. But that's grown cognitively and socially more and more. It's very obvious. (Betty, parent)

For some children, attending SDN Beranga meant that they were more "comfortable" to be around their peers, although they may still prefer to play on their own. The disability friendly environment and inclusive education approaches allowed children to grow their levels of familiarity of being in a group environment, taking notice of or interacting with peers.

[My son] he really is a very - he likes self-play and usually wants to play with an adult, like for jumping. He is much more independent today, he has improved a lot in his everyday skills. […] I wouldn't put all the credit, that it all happened just because of Beranga, or the mainstream preschool. But in general, since he started [at] Beranga a year ago, I've observed [my son] to be much more comfortable with a crowd. He doesn't have to be friends with everyone, but he's much more comfortable if there are people around him. For example, he's aware that there is an educator here, classmates there, other kids there, someone's crying in a corner. He notices these things now. That the kind of awareness…it became more evident with [my son]. (Peter, parent)

Some parents emphasized the importance of their own learning and gains in parenting confidence as a result of their child attending Beranga preschool. Parents spoke of learning and adopting new parenting strategies and skills, gaining a better understanding of their child's specific needs and how to meet these. Parents growing their own understanding and strategies helped in their child's development. Children can adopt what they learnt at Beranga and continue at home. One mother explains how she now uses short videos (provided by Beranga) to prompt her daughter to follow a particular daily living skill, like brushing teeth or going to the toilet.

[Beranga] have opened my eyes. I read a lot of articles and spoke to all the therapists there, that are specific with dealing with kids with special needs. Especially autism. And it's been a good journey for me. It's been a lot of positives for my daughter. She can speak now. She can tell me what she wants without having to throw tantrums or crying or doing anything that makes her excessively uncomfortable. So they would speak – we try to navigate her ways of doing things. She is a hyperactive child so when we're […] eating we have to take turns to kind of change [the] environment. If she's eating few minutes, we have to kind of come up with something else to get her entertained. Potty training was my challenge. They had to give me some videos that I have to let her use in order to address some of her everyday skills, like going to the toilet. (Rani, parent)

In the interviews all parents said that their children had benefited from attending Beranga and improved in their development. Developmental gains varied depending on the children's abilities and their level of disability. Parents reported gains in independence (everyday living skills); social skills, connection and communication; emotional maturity; and cognition. These findings are generally consistent with our analysis of child data records, particularly cognition (Understanding) and communication (Use of language, and Forms and purpose of communication). Some children also improved considerably in the Play domain. However, with the large range and significant number of outliers, further analysis would be needed to identify what groups of children are improving more, or not, in the Play domain.

6.2   Family-centred approach

Key stakeholders and a number of families identified that one of the strengths of the SDN Beranga Preschool model is that the service is family-centred and is there to support the child and the family. For example, one staff member explained:

the role of the family [is] quite unique here. I hadn't actively looked to work with families until I came here. And it's changed my practice, I really want to hear what's going on for my families at home. You start to understand why we give support, and that's had an impact for me. And it's not in terms of fees or being customers, but we fully feel the families are the ones leading the journey. They need to be the ones in charge. And yes we're here to capacity build, and that ripples through everything we do. (Stakeholder 11)

Overall, parents were satisfied with SDN Beranga's approach to working with the child and their family. This was evident in the survey, where parents responded positively about Beranga's impact on themselves and their family. Of the 30 respondents in the survey, 71 per cent stated Beranga helped them feel listened to, and that they felt a sense of safety; and over half felt Beranga helped them feel more connected with others, and provided opportunities to participate. Approximately 40 per cent felt Beranga helped them feel included in their community.
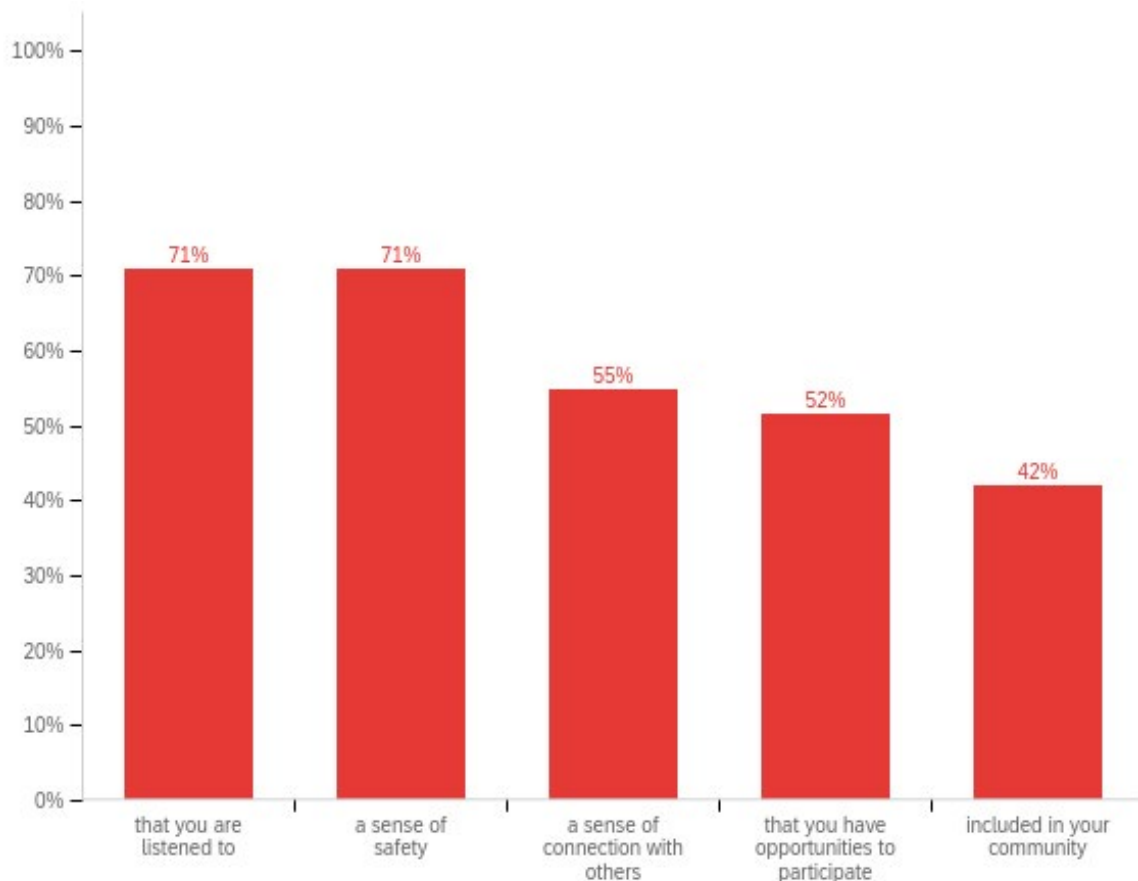
Figure 13 Has SDN Beranga Preschool helped you and your family feel (select all that apply):

These survey findings are important when considering the potential for SDN Beranga to enhance parents' and families' wellbeing (as identified in the Outcomes in Table 1). However, they must also be interpreted with caution due to the subjective nature of the responses. According to Adams et al. (2019), parent satisfaction is very difficult to measure, largely because of the subjective nature of satisfaction. Furthermore, they indicate that "parents may feel reluctant to report dissatisfaction with a service for fear of it being withdrawn" (p. 188). This, and another recent Australian study looking at family outcomes (Wicks et al., 2021), emphasise the need to focus on the impact of early intervention on family outcomes, as opposed to solely on child outcomes, noting that positive outcomes for autistic children do not always correlate to positive outcomes for parents and families (Adams et al., 2019; Wicks et al., 2021). They encourage greater attention to family-centred models of early intervention that prioritise practices to support family wellbeing.

This is consistent with Roberts and Simpson (2019) who find that a family-centred approach is one of the elements of best practice in early intervention for autistic children. With children being diagnosed with autism earlier, parents' role in delivering early intervention support is critical. Recognising that families vary in their capacity to support their child and that this capacity may vary over time is important. Best practice includes supporting parents to implement strategies in the home. Roberts and Simpson state that "the overarching programme goal should be to ensure that families are as fully engaged as possible (p. 108)." Similarly, Fleury et al. (2015) stress that greater emphasis should be placed on supporting families to implement specific strategies at home.

As will be discussed further in 6.2.2, parents' role in delivering early intervention support is critical and parents should be supported to implement strategies in the home (Roberts & Simpson, 2019). These key themes are somewhat similar to findings from a small qualitative UK-based study with mothers (n=17) of autistic children about their perception of 'good practice' by professionals and services (Stanford et al., 2020). The three core themes identified were:

1. valuing aspects of professionals' engagement, manner and interactions

2. professional and services provision (such as knowledge, community building and hands-on skill development)

3. the ways services delivered their provision (e.g. through personalisation and adaptation).

The findings from our interviews with families very much align with these core themes, which are presented in this section as: communication among parents and staff, capacity building for parents, and child-centred learning and planning.

6.2.1 Communication among educators, parents and other services

When a family first enquires about the service, information will be provided about the preschool, including how children are prioritised for enrolment, and what the service delivery model looks like. Parents valued prompt and friendly responses and clarity (about wait times or documentation required) when they first contacted SDN Beranga, and then later the opportunity to visit the centre in person, speak to educators, and receiving detailed information about the SDN approach and the documentation needed for an application. It is understood the Family Resource Worker is integral to the enrolment process.

> So right from the start, we got a prompt response to a general enquiry from the internet, an invitation for a site visit which we took up. [The teacher] met with us and talked us through all enrolment requirements. Then we got a detailed email asking for all the documentation. We also met his teacher who would go on to be his teacher. (Sahra, parent)

> The way they do the starting point and all, they had to do what they've got to do, and it was quite well. It was quite organised, well planned. Beranga, have I think a correct procedure of how they do things. I was quite happy with that. (Haris, parent)

After a placement had been confirmed, the first introductions at the centre were important to establish trust and connection to the service and its educators.

Staff and parents

SDN Beranga uses a number of communication channels and tools to keep parents informed about and involved with their children's education. This includes an online application, Storypark, where educators can upload assessments, Individual Education Plans (IEPs), observations, photos and reflections on children's learning and other updates.

Parents participate in one hour planning meetings with preschool educators to set goals for their child as part of developing their IEP and then have regular meetings and conversations with the team around the child to review progress. Parents, educators and SDN Beranga also communicate through email, text messaging and phone calls as needed.

Parents highly valued the different communication methods and opportunities to receive or give feedback. Most interviewees said they had a short conversation with an educator when collecting their child. These regular interactions made parents feel they were receiving a personalised service and were kept informed, and this regular communication also enabled them to learn and implement new strategies that the educators were using.

> The best part is ... well, there's a couple. The best is that we really enjoy the reports that they give for every student to each parent when they're picked up. So every student gets a bit of a breakdown report to the parent at the end of each day about how they've been going. (Sahra, parent)

> I don't think they can improve anything else because they're already really good at it... I don't know about others ... but I have been supported throughout the time. Every day after school, me and [my child's] teacher, we used to have a ten-minute chat about what he has done and what we can do. If he has done this behaviour, we can do like this. That might work. Then suggestions from the speech or occupational therapist. So I have been supported throughout. (Belinda, parent)

> I think all is good. ... We have Storypark as well to see the progress report from the educator. There's a monthly progress report. I think the communication channel is very clear and very open. (Peter, parent)

Regular contact, building a relationship, rapport and trust with the teachers also allowed parents to raise any concerns or suggestions they had and made it easy for them to ask for support if they needed it.

> But even if we had any I suppose questions or concerns, the teachers went out of their way to help us and give us more pointers. I'm always asking, "Can you give us some more things, more activities to show him to do at home?". Because at home, obviously, I want to encourage him to do all the activities they do at school and to try and keep the routines the same. They're excellent in that regard. (Betty, parent)

Therapists

Communication between the educators, other staff, parents and therapists is evidently very important for families and for the quality of the education and care that the children receive. Next, we will look at how this communication occurs with therapists employed by SDN Children's Therapies working with children at SDN Beranga, as well as external therapists who may work with children attending SDN Beranga but do not conduct therapy on site.

Families were generally positive about the communication among educators, therapists and parents in relation to their child's goals and progress. Families who were using external therapists did perceive that there was a greater risk of a "communication gap" between Beranga educators and therapists, compared to children who worked with SDN therapists.

Many parents in the interviews said that they were satisfied with the communication between SDN Beranga and therapists.

> My experience is good. Basically, if we had an SDN therapist that would be good, there would be no gap. […] Here the therapies will work for the child, and the educator doesn't see what they're doing. There is a bit of a gap, but it means we are interacting with the educator very frequently, so in some ways it's good. But also good for the therapists to be working with the educators. […] The [external] therapists, they will speak with the educators [at Beranga] and tell them what therapies they did that week. (Bahja)

Staff agreed that internal SDN therapists made it easier to transfer new practices with the child. For example:

> I'm doing it with you [therapist] and learning exactly what you [they] want me to do, and I think that's really helpful. I think if you're if you're able to see it and then they can also see […] how the child reacting in the classroom […] But if they're only having clinic sessions with services outside, you might describe it, and they'll tell you, that's all. (Stakeholder 3)

Staff at Beranga confirmed the various communication channels among educators, therapists and families. For example:

> [we] have little chats on the run about what what's happening, and they also provide us with a session summary so that those summary that they give to the families they will copy us in the email so that we can have a read and see what they've been working on and any recommendations. And then we'll use those recommendations in our planning as well. (Stakeholder 4)

> connecting with the external therapists is probably a little bit trickier, so it's often the case of us making contact with them. It's not quite as effective as the SDN therapists. It takes a lot more work on our part to get them to engage. (Stakeholder 4)

> I think generally [the communication is] pretty good. I know there can sometimes be difficulty with parents being quite busy and not reading certain summaries, or there's also like sometimes parents are from different from diverse backgrounds, so there's a, there can be some trouble with understanding, so maybe translation services. (Stakeholder 5)

SDN Children's Therapies allows families to select where their SDN Therapist provides their NDIS services. They have the option to choose between a clinic session (on site at SDN Beranga or another location) or at home. The aim is to build the families capacity to support their child, or therapy to be in the preschool with the educators whereby therapists work with the educators on building skills of the child in the preschool setting. The interviews indicated that a minority of parents selected to have SDN therapy sessions occur outside of the preschool or using external therapists because they wanted to be able to attend the sessions with their child. They felt that having an SDN therapist only work in the preschool limited their opportunities to be part of the sessions in order to practice the therapy at home.

> So with the therapies, I always prefer to attend myself so that I can talk to them and I can learn the way that they are doing things, because there is no point of doing therapy if I'm not doing it at home. That's the first thing I was told by my

paediatrician as well as the other families, that you have to do a lot of practice of that stuff at home […] So that's the first reason I never wanted any therapies in his day care setting. I want it in the clinic so that I could attend. (Belinda)

As another example, a parent talked about using Storypark to link up the services their child attended, which allowed the educators at Beranga and a long day care, as well as their external therapist, to understand what the child is doing in different settings.

So again, there is all different methods of communication. I think most of them do communicate through the emails and then I have linked them on Storypark as well so the [service name] teachers, the […] therapists, can look at all the reports and everything and all the updates from SDN and the SDN teachers and educators can see all the Storypark and all from [service name]. (Haris, parent)

Overall, parents and stakeholders were very positive about communication among educators, therapists and parents. A few participants identified areas to streamline tools or make the processes clearer for all parties.

Mainstream ECEC services

Communication with other services was also important for many parents. Over 40 per cent of children (14/32) whose families completed the survey also attended another preschool or long day care service in addition to SDN Beranga. There were mixed findings about whether Beranga educators and educators from mainstream services communicated. There were notable mainstream services that were identified as communicating well with Beranga. Additionally, one family indicated that Storypark is used as a way for Beranga and mainstream services to communicate about a child. Another family indicated that they were expecting communication because SDN had asked for the service name and phone number, but that they were unsure whether the communication was occurring. Similar to the communication between Beranga staff and external therapists, some families shared information between the two services, and gave tips about what was working well at Beranga.

One parent addressed this 'gap' in communication by developing a tool for sharing information between Beranga, the therapists and their son's mainstream ECEC service, so that "everyone's in the same boat, pretty much" (Peter, parent). Another parent suggested perhaps more communication with mainstream services/schools would enhance the school's capacity for planning.

Another idea I would say, that is another idea, [is to] work with the other mainstream schools and also try to assess what [the child is] doing there and then they can also set their strategies. (Samir, parent)

Some of the issues identified by parents align with stakeholder views about the benefits of building links with mainstream services in order to support SDN Beranga children and families, and also as part of the broader need for capacity building in the sector. This is discussed further in 6.3.2.

6.2.2 Capacity building for parents

One of the key aspects of SDN Beranga's family-centred approach is the way in which it builds parents' capacity to support their children, both through intentional upskilling and increasing their confidence by placing their needs and priorities at the centre of the child's planning (as outlined above).

Several parents said that, particularly when they first contacted SDN Beranga about enrolment, they had limited understanding about autism and their child's education needs and learning opportunities, often making them feel uncertain about their child's future. For example:

> At the beginning [after we received the diagnosis], it was really overwhelming for me. I had no idea where to start and what to do. So I was looking for someone, something to give me ... shed some light on everything. (Belinda, parent)

Many parents enjoyed opportunities to be involved in their child's learning and the flexibility that SDN Children's Therapies and SDN Beranga brought as combined support from both programs. For example, when they were invited to attend and observe their child learn and play with other children or work with their SDN therapist in the clinic, having these options and opportunities to learn from educators as well as their therapist was something families valued.

> She can have her therapy appointments in her classroom but also observe things that are happening, what the others are learning. So her 1:1 therapy is in classroom and she makes fantastic progress. On other mornings she has 1:1 early in the morning, where I can attend, so I can be in the room. That's when I learn too, and I can implement that at home. So, both work – in classroom and with me, it's a great routine. (Melissa, parent)

Through involvement in developing the IEPs and communication with educators and therapists, many parents were able to improve their own understanding of their child's needs and increased their capacity to respond and communicate effectively. This allowed them to transfer some of the learning approaches from the preschool to the home. This is consistent with Standford et al.'s (2020) study, which found that mothers' hands-on skill development covers both skills that children were taught via practical work and skills that mothers learned directly.

The qualitative interviews with parents demonstrated that many were already benefitting from the knowledge of the educators working with their children. However, a couple of parents also commented that they would like to know more about what activities are done in the classroom so that they can implement them at home. One example was for the educators to record videos of them doing specific activities with their child that could then be shared with the parents.

> Because then we can see whether they are enjoying it or not and then we can also implement the same activities or the same sort of strategies at home. (Rani, parent)

Another idea put forward by a parent was to have more opportunities to share information among families. It was recognised that, at the time, this may not have been possible due to the risk of COVID-19 and related restrictions, but they suggested that sessions might be arranged with precautions in place.

> [You could do] some show and tell with parents or any sort of activities within that group like small gatherings. I would say that the parents are together with other parents to kind of see hey they come up in circles, they're playing with each other or anything like that. (Peter, parent)

Some parents identified they would benefit from more information and referrals to resources and courses specific to autism and their child's needs, which would in turn improve their parenting skills. For example, parents commented on their interest in accessing more information, guidance, and referrals:

> [I] don't know of any info sessions, but [I] would be interested in more information or referrals about behavioural parenting course, so I have to try to find where to do that. But if Beranga could help tell me where to do that, I think every parent would have a use for that…just the info where to go "stepping stone of information for resources that parents may want". (Melissa, parent)

> Absolutely. I'd love I suppose any information that they would be willing to provide in the centre, like what would be our best option [for school]. […] Obviously we would definitely take on board what SDN would tell us and if they said, "Let's go with this option", we would take that into consideration. (Betty, parent)

> I'm looking for more support to be honest. I'm new to all of this. More referrals, or educational classes. (Tina, parent)

Two families commented that for autistic children, due to their great variability in abilities, there was limited clarity and guidance for parents about their child's education options and pathways. Peter (parent) noted that he would have liked "a bit more information" at the start, including a better understanding of the long-term pathway, and how SDN Beranga's curriculum and SDN Children's Therapies could enable his son's mainstream schooling in the future.

> I think the only thing that could have helped us [in the beginning] is the curriculum around it. It wasn't very clear…- what's the plan for someone going in there? What happens when he turns five? What happens when he turns six? Or is this an in between or is this a limbo? Should [he] go to something like a special needs school, or a mainstream one, or a public or a Christian school? So, I think that curriculum just wasn't very clear. […] what are the most fundamental skills for him to be ready for school. (Peter, parent)

Educators also indicated that one way to improve the model would be to "incorporate the parents more" (Stakeholder 5) so that they can learn from each other about practices and tools that are working in the home and preschool setting. Looking at transitions in particular, Stoner et al.'s (2007) qualitative study into parents with autistic children found that parents' understanding of their child's strengths and weaknesses was key to supporting their involvement in planning for transitions (p29). This would improve parents' skills and confidence and also show that they are valued partners in their child's learning. In line with this, in a study reviewing instruction practices targeting school readiness skills for autistic pre-school children, Fleury et al. (2015) emphasise the importance of implementing specific strategies at home because home-based learning has a significant impact on outcomes and not all children attend preschool full-time. Other studies, in Australia and internationally, also found that support for parents is the most effective way in contributing to children's development (Hume et al., 2005) and family outcomes (Wicks et al., 2021).

While it is understood the COVID-19 pandemic has presented logistical and resource challenges for extending the core preschool services, families identified an interest in learning more about what tools and strategies educators are using in the classroom, to learn and share with other parents, and also to be connected to resources and courses delivered through SDN, or through external services. Additionally, funding constraints limit educators in the preschool from being able to provide more support to families. It is therefore important that educators work closely with therapists as they have more capacity in their roles to support families at home and in the community.

Furthermore, the SDN Beranga team includes a Family Resource Worker with a social work background. The role of the Family Resource Worker is to support the family so they have a team around them that extends beyond their time at SDN Beranga. A large part of this is coordinating the transition to school, which ensures all families are supported through the process that is known to be a stressful time for parents. Transitioning to school is a key milestone and can evoke negative emotions in families (Connolly and Gersch, 2016) which is consistent with families wanting more guidance and at times being advised on what school they should go to. Through interviews with external stakeholders, it was evident that SDN Beranga has well-established processes to support families in their transition to school decisions.

6.2.3 Personalised learning and planning

Educators and parents work collaboratively to develop a personalised plan for the child's education goals and milestones. These plans are regularly reviewed and are core practices required under the Early Childhood National Quality Framework. Additionally, a prerequisite for receiving Higher Learning Support Needs funding is that SDN Beranga develops an Individual Education Plan (IEP) for each child. The IEPs may also be used for other purposes including applications for NDIS funding, supporting the application process to transition to school and any other applications that support the child and family in receiving extra support for their child. Several parents referred to the planning process in their interviews, and they felt that they were receiving a more "personalised" early education service because Beranga educators "know my child". They liked the clarity of knowing what the educators were working on in a particular month (e.g. potty training, sensory skills), being able to track their child's progress, and being involved in the process. An internal stakeholder explained the approach:

> And we do that [IEP] for every single child. When they start. We then write the individual education plan which we meet with the families to discuss what are your goals? What do you see [as] important and then we tell families how we can achieve it. We break it down. We give them strategies, we give it to their therapists or other services, in hopes that they're going to do what suits. (Stakeholder 3)

These practices generally align with good practices identified in the literature around the importance of including parents in the planning process. A paper by Burrell and Borrego (2012) emphasises the positive child outcomes associated with including parents in the planning of their autistic child therapies, services and overall goals and discusses how this can be achieved. Ideally, parents should be involved from the onset of support planning in order to collaborate with clinicians on assessment, goal development, problem solving, and choice of services and strategies. Parents can be involved in various ways, including observation, individual teaching, modelling, in-vivo coaching and in-home planning. Therefore, any service would need to consider the model in which

they provide services and their allocated funding as well as the regulatory bodies they report to, as these would determine the ways that they could involve families.

Parents provided many examples of educators working hard to find different ways to help children settle (including when being dropped off in the morning), supporting any behaviour of concern, and tailoring activities to the child's interests and strengths.

> I would say apart from the education part, the days I drop my son in Beranga, the rest of the day, I am totally ... I feel safe because I know he would be taken proper care of, in terms of his needs. So the educators are addressing his needs or his interests because his interests are different. (Belinda, parent)

> Storypark is also very useful and the lesson plans. They prepare these specifically for each child, the Individual Education Plans; those are prepared with care. We have an hour-long meeting with the educators before ... to talk through goals before those plans are prepared, and then the plans reflect those goals. (Sahra, parent)

> We have Storypark as well to see the progress report from the educator. There's a monthly progress report. I think the communication channel is very clear and very open. […] They give feedback about what happened during the day […]. It's kind of like an in between of more personalised and much more attentive care. It makes me feel special and it makes me feel like [my son] is being cared for 100 per cent all the time. (Peter, parent)

Overall, families talked about the pedagogical strengths of SDN Beranga, particularly the strategies and approaches educators used when communicating with their children. These aspects of educational practice are, of course, facilitated by the low ratios (1:3 instead of 1:10) and small group sizes (9 in each room), which are not viable in mainstream settings without significant additional funding and higher fees (see Table 3).

6.3   Structure and viability of the SDN Beranga Preschool model

As outlined in section 2, the change in funding for disability services initiated SDN's decision to change from a long day care to a community preschool model. Overall, staff and stakeholders were supportive of the shift to a preschool model, noting that the consistency in children's groups across the week and the common roster for staff across the week were better for children and staff. Stakeholders, and some families, commented on the strengths of the existing service model, as well as areas for consideration.

Ratios

In the interviews, parents were asked what they liked the most about SDN Beranga. All parents commented positively about at least one aspect of the SDN pedagogical approach, which is reflected in the inputs and processes outlined in Table 1. Parents recognised that the high educator to child ratios enabled a focus on the children's needs and also an opportunity to provide personalised feedback to parents.

It's because their classrooms are so small, I think that they can do that, like they can be really focused and go, "Okay. Well, this child likes this" and "This child might like sharks" or whatever, "So let's really incorporate all of these things into our activities to enjoy them more, make them want to focus more" and all that sort of stuff, which is really lovely. (Betty, parent)

Another parent explains one of the differences he has noticed in comparison to when he picks up his son from another childcare they attend:

One other thing that I've also noticed – the energy of the educators within Beranga is very positive all the time. […] I mainly think it's the ratio probably compared to the mainstream one. The educators are often stressed, especially in the afternoon. […] But for the SDN one, I'm still seeing their energy. They give feedback about what happened during the day and obviously because of that ratio, they can tell me something that's specific just for [my son] what he did on the day, this is what he enjoyed doing today and stuff like that. (Peter, parent)

A stakeholder also reflected on Beranga's approach, compared to mainstream preschools:

Here, all the other staff are used to working with ASD, so they understand how children with ASD function differently. And with 1:3 ratios you can just have so much more time for these children, and able to achieve goals and outcomes. And to support them in their journey. And sometimes in mainstream, children with ASD are just there, not really providing anything additional for them, just being looked after while their parents work. At Beranga it's so individual and so supportive. Have lots of tools in place, where in mainstream it would just come down to whether the educator decides to use them. (Stakeholder 2)

Staff training

There were mixed views about the specific training and skills of the educators required to work with autistic children. A few parents spoke highly of the autism-specific training and experience that a number of the educators at Beranga have. For example:

At SDN all the teachers and educators are well-trained, and they all know what sort of kids they are dealing with, and what they need to do, and their policies and procedures …they always keep things up to date. (Haris, parent)

It is understood that educators are not required to hold any specific training in autism, but that a number of the staff have some training or experience working with autistic children or other additional needs.

Others, however, had some concerns about whether educators had adequate training for autism-specific preschools. This was recognised a system-wide issue, not specific to Beranga.

…teachers do their degrees that they should automatically be trained on how to look after autistic children. That should be part of their normal training but it's not. That's like an addition to their teaching degree and it shouldn't be the case. It should be, when you do a teaching degree that that should be standard across the board and I think that that needs to change. (Betty, parent)

Some parents were more concerned about casual staff, who may not have the right skills or training, and do not know the specific needs of their child.

Yes, I'm starting to notice a lot of staff turnover which isn't good, some staff there I really like and it is sad when they leave and it is hard for the children especially children with autism and they rely solely on routine. So they leave and then have new staff, and casual staff that they slowly work into having on, that to me is a mess. (Melissa, parent)

I was concerned that when new staff come in, there was a casual staff, I don't know if they have any training, or just regular teaching, but one teacher in particular concerned me in that she didn't know how their minds tick so I did raise that with [Director] so she helped me through that so that just goes to show how good the centre was with communication […] and then I could see the educator was doing better and trying harder, so that shows me that they are working hard to fix things together. (Melissa, parent)

SDN noted that the increased levels of sick leave since the COVID-19 pandemic have impacted all services including SDN Beranga, and this has also led to an increased reliance on casual and agency staff.

Stakeholders expressed similar sentiment, noting the lack of autism-specific training required for educators undertaking qualifications in Australia. This was compared with a handful of educators at SDN Beranga who had undertaken autism-specific training outside of Australia. In order to address this gap in skills and knowledge, it is understood that educators who are employed at Beranga undertake autism-specific training modules and mentoring in order to equip them with the skills needed to work in the rooms. Internal stakeholders acknowledged that it is a challenging environment and, especially for educators without prior experience working with autistic children, it can be confronting and challenging, leading to some staff turnover. Furthermore, there is limited autism specific training available for educators in Australia. There are specific post graduate certificates available; however, these are only available to the degree qualified early childhood teachers limiting the educators who have a certificate 3 and/or diploma from accessing these courses. Previously, the staff in the Satellite Program would run various workshops which educators attended. However, funding and resourcing for such workshops are limited.

Recruitment and retention

Parent's overall satisfaction with educators' skills and autism-specific approach (discussed throughout 6.2) was also contrasted with the perspectives of stakeholders, and a handful of parents, who recognised the high staff turnover and challenges of recruiting educators with the necessary skills to work with autistic children.

Staff reflections on the need for staff training and skills development aligned with parents' views about the importance of staff continuity and routine for their children, some of whom identified high rates of staff turnover in recent months. This is of course an issue that is not unique to Beranga, with educator recruitment and retention being an ongoing challenge across the early childhood sector (Thorpe et al., 2020), and a particular concern with the impact of COVID-19 on the workforce. This has, however, been a longstanding sector challenge for educators working in autism specific settings where children have higher needs (O'Brien Rich Research Group, 2012). This broader sector challenge was recognised by a number of families. Parents expected and appreciated that educators at Beranga have been trained, or are familiar with, specific practices and strategies for working with autistic children. For children who attend mainstream services,

many parents were concerned about educators' lack of skills and capacity to meet their child's needs. A number of families had removed their children from mainstream services when they started at SDN Beranga, while others relied on two or three days of mainstream childcare for employment or other family needs.

6.3.1 Collaboration with therapists

An integral part of the SDN Beranga service model is the way in which NDIS funded therapists (employed by SDN as a registered NDIS provider) can work with children in the classroom, and in the on-site clinics at Beranga Preschool. This allows parents to access therapists (speech pathologists, occupational therapists and psychologists) in a flexible way, either in classroom, clinic or home settings. Children can also access external (non-SDN) therapists through other NDIS providers; however, they are not able to work with children at the Beranga centre.

While many children attending SDN Beranga have regular therapy sessions, the long waiting lists for access to therapy (whether through SDN or external providers) limit what is available. Families may work with a speech therapist, an occupational therapist, and sometimes have an additional session with a psychologist. Seamless communication between educators, therapists and parents (and occasionally other services) was very important for families.

Findings from the survey indicated that most families agreed that Beranga educators and therapists worked well together, as illustrated in the figure below. From the sample, more families attended therapy with another provider (20/32) compared to with SDN (16/32).
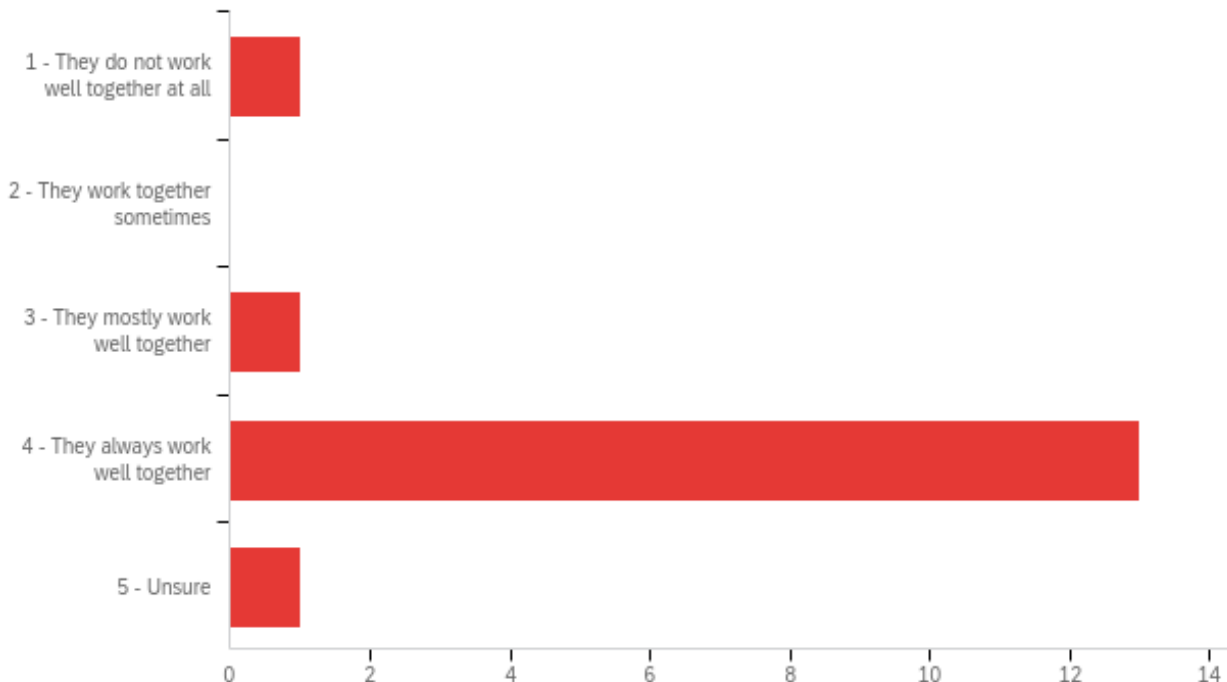
Figure 14 How well do SDN Beranga Preschool staff and therapists work together? (Survey response = 16)

Others though, indicated they felt like the intermediary between the staff and therapists. For example, Tina's child was using an external therapist as she was on the waitlist for an SDN therapist. She explains:

> [I] convey the information between each other, I'm in the middle. There hasn't been too much information. (Tina)

Most parents indicated they were using an external therapist because either they could not access an SDN therapist, the cost of SDN Children's Therapies was higher, or they had an existing therapist through an NDIS provider prior to starting at SDN Beranga and were happy to continue this arrangement. Some families also had a mix of SDN and external therapists; for example, their speech therapist was from SDN and they had an external OT. This was usually a result of limited availability of therapists at the time of their search.

It is understood that recruitment of therapists is very challenging as the sector is experiencing a significant shortage as well as a high turnover (NDS, 2021). A number of families indicated that therapists had recently left SDN and so they were waiting to see whether the position would be filled to continue their child's therapy. This gap concerned some families who wanted to ensure continuity in their children's therapy.

It should be noted that through SDN Children's Therapies, therapists are able to attend mainstream services if the family chooses. Families select their service delivery using their NDIS funds.

6.3.2 Links and support for mainstream ECEC services

As noted in 6.2.1, Beranga staff and stakeholders recognised the benefit of having a close relationship with the mainstream services that children from SDN Beranga also attend (dual placements).

> It would be brilliant if the educators or therapist from Beranga could go and do an actual visit to the children in their other centre and see them there, not just a phone call catch-up but like go out and see them in person and talk with their educators there. (Stakeholder 6)

A number of stakeholders commented that one of the strengths of the previous Beranga model was the delivery of training and professional development for educators working in mainstream settings in order to support the inclusion of autistic children.

> [It was] really guided by this service. So we had our six workshop topics that so when the service started with us they had a mandatory introductory to exploring autism spectrum disorder, a two hour Workshop where we did with the whole team.
> Then we ran different topics that sensory processing, communication, play interaction, where satellite centres could come at a discounted price, but we opened them up to all mainstream services and they paid for that. And that's the part that we probably could continue. (Stakeholder 9)

But it [would] also be really good to have those satellite classes again. Where, you know, where the local day cares or preschools were supported by Beranga satellite. And there was, you know, the teachers within the school were taught how to support a child with autism or disability and then how to assist with their transition. So it would be and, you know, the special needs educator going in once a week, once a fortnight, supporting the teacher to support the child. Not only day to day, but also that transition, so that would be really good for Beranga and for the child. (Stakeholder 8)

A research study from one of the federally funded Autism Specific Early Learning and Care Centres (ASELCC) in Tasmania found positive results for a hub and spoke model, with findings suggesting that "non-specialist staff can deliver early intervention in outlying mainstream settings" (Stephens et al., 2016, p. 81). This type of model could also benefit children in satellite services who have not yet received a diagnosis of Autism but may display behaviours that would be supported by best practices in early intervention.

In particular, stakeholders identified the skills gaps within mainstream services and talked about the potential role for SDN to upskill educators across the sector.

It would be good if we could provide more support around children with ASD. Some services are hesitant to enrol children with ASD. (Stakeholder 2)

I think that the preschool and day care teachers really need support and how to support a child with autism in the preschool classroom. I think that's … an area that is lacking. (Stakeholder 8)

Most families and stakeholders recognised the challenges of forming and maintaining connections to mainstream services during COVID-19.

In mainstream ECEC there's definitely not enough [good practice models] coming from mainstream to here, there's so much going on here, it would be worth someone from Beranga going out and engaging with the community and other services. And I think we used to do that a lot, but with Covid that kind of stopped. Because I think part of the aim of Beranga is to get the word out there and gain acceptance. (Stakeholder 2)

Comments about the benefit of linking with and supporting mainstream ECEC services aligned with views about the potential benefit for children participating in mainstream settings. Commenting on Beranga's autism-specific approach some stakeholders identified how SDN Beranga could modify its model to better align with research about inclusive practice and the benefits of attending a service with typically developing peers.

So we really need them to then get that exposure from other children being at another daycare […] [that's] where I think an integrated service would support that because there is that extra support for those children that need it, but there's also the exposure they wouldn't get at a service just specifically targeted for disability, or you know other diagnosis. (Stakeholder 3)

I think with the size of a lot of the LDC [long day care] services, if there was an option to have a designated room, but not even because that's exclusionary. But also the peers, the learning is twofold. So we would holistically love to see it as an alternative model with typically developing peers in the space. Or a model where

children attend 2 days in the Beranga model and the other days SDN inclusion. (Stakeholder 10)

Research shows that the peer mentoring and peer modelling is very effective. And that's what children who attend only Beranga are missing out on. Or all the typically developing peers are sitting on the mat, and you can use that to model appropriate behaviour. (Stakeholder 10)

Ideas about inclusion and communication with mainstream services were closely connected to stakeholder views about whether Beranga is designed as a short- or long-term option for children. Some stakeholders suggested Beranga should only be short-term, with more defined goals to transition children to mainstream services.

Then we have told families this is not forever like Beranga is not the not where your child needs to be forever because we can only go so far. You know if your child really wants to engage with social play, there's not many children that will do that with you. So we really need them to then get that exposure from other children being at another day care, at the park, work you know wherever possible. (Stakeholder 3)

These views are expected given that SDN Beranga was set up as a transition service, with families staying for shorter periods of time before moving to a mainstream preschool or long day care setting.

Section 7 discusses some of these findings and suggestions in more detail, including how different models and practices align with the research literature.

6.3.3 Supporting transition to school

One of the strengths of Beranga is its capacity to support families and children through the transition to school process, including access to mainstream schools, support classrooms or schools for specific purposes. This includes supporting parents through the administrative process of enrolling in a local school and advocating for the child's needs so they can receive the support they need.

As also identified by parents and stakeholders, the capacity for SDN therapists to continue supporting children when they go to school is also beneficial. Families can continue to work with SDN therapists after their child has transitioned to a mainstream ECEC service or to school. Parents identified this as a benefit for the continuity of support for the child. One parent was "grateful the school is considering letting them [therapist] go into the classroom, see how she does and copes with a larger classroom" (Rani, parent). Similarly, another parent identified their reliance on their child's therapist and wanted to maintain the continuity when their child started school:

But now the therapies I'm having, I'm just so dependent on her and I'm happy to go and see her and my son next year at school. So my son is starting school next year, and he'll be going to a mainstream class and then probably the therapist, probably she will see him in the classroom next year. (Belinda, parent)

In addition to supports available in the transition to school, other external stakeholders interviewed also identified SDN Beranga as a unique and vital service for children and families within the

region. Specialist medical and social service providers that were interviewed as part of the evaluation explained that SDN Beranga is among the few services they make referrals to for autistic children. The limited options for autistic children is often linked back to the lack of skills and training of educators working at mainstream long day care and preschool services, as was mentioned by a number of stakeholders with knowledge of the local service sector.

6.3.4 Cost and availability for families

Since 2020, families at SDN Beranga have received free preschool due to the NSW Government's Free Preschool funding. Prior to this initiative, parent fees were $80/day or $40/day for concession holders. It is unknown whether free preschool funding will continue or what the impact will be when parent fees are reintroduced. A number of parents commented that the cost (without free preschool funding) was high, but many were quick to rationalise the expenditure by the quality of the service for their children.

One concern that some parents voiced was around the limited duration of preschool available to children. In addition to the practical constraints for parents who work (which is discussed further below), some parents felt that the time they spent at Beranga was not adequate to support their developmental needs.

> One day is nothing. You can't learn anything in six hours in a week. So maybe for a three-year-old, it could be two days, and a four-year-old, it could be three days, because these children need intensive ... more intensive intervention which I believe Beranga can provide not the mainstream classes. If the parents are working and if the child is going to Beranga one day, they will have to go to the mainstream for those four days, or three days as least. So I think yeah, that's something ... I know that it's really hard because it's really expensive and the funding and everything. (Belinda, parent)

Some parents were concerned that the lack of access to more hours/days meant that the children had to attend another service on the other days, where their needs were not necessarily being met. There is limited evidence on the effective 'dose' for preschool for autistic children (Gendera and Katz, 2019). Literature on mainstream preschool (Pascoe and Brennan, 2017) as well as a review of services for autistic children have found that preschool age children benefit from intensive (15-25 hours/week) ECEC in the two years before school (Gendera and Katz, 2019).

It is recognised that the funding and policy landscape (outlined in Section 4) impacts the viability of different service models, including the number of hours/week a child attends. Currently, children are allocated up to 600 hours per year under the NSW preschool funding agreement. However, changes to funding for early childhood education at state and federal levels will impact funding and delivery in the future.

Parents may not necessarily understand the regulatory restrictions under which the service must operate, which was demonstrated by many parents identifying longer opening hours and more days as an aspect they would change. As mentioned above, the reasons for this were because of perceived developmental needs, where the parent felt the one or two days was not enough to support their development. Others identified logistics of travel and employment as reasons why they would like longer hours or more days. For example:

Perhaps just a longer day. They start quite late at 9:30 and finish early at 3:45, but that's only from a working parent point of view. It's probably better for the children not to be there that long, but just for my own convenience, I would like longer hours there. (Sahra, parent)

Demands for more days were closely linked to a recognition that more autism-specific services are needed in the area.

I mean to be honest in an ideal world this type of service is readily available in all suburbs but the reality is [that it is] not. Maybe in five years or 10 years that becomes the thing. I understand that always it's the chicken and the egg situation. That's why we do these studies. We create awareness. (Peter, parent)

Beranga it's a good centre. I wish we had centres like Beranga all over Sydney. That's the hard part. And the waiting list. Because not a lot of centres like Beranga … basically have the space for every kid who needs the help that's going through these challenges in a younger age. So they definitely need to make it easier for parents because you can't easily pick up and leave and move to a different area because that's the only place that your child can go to that needs special care. (Rani, parent)

Overall, under the circumstances for 2021 and 2022, families at SDN Beranga Preschool are in a good position because they have access to a high-quality autism specific service at no cost due to NSW Government free preschool funding. However, depending on future funding decisions by the government, free preschool may not be sustainable for SDN Beranga in the future.

7 Discussion of findings

Through the family survey and interviews, it is evident that SDN Beranga is having a positive impact on children and their families. Analysis of the child data records suggests the intervention is having an overall positive impact on children's development, and findings from qualitative interviews and online survey are overwhelmingly very positive. Through a review of the literature, policy and input from families and stakeholders, there are some areas of practice and program design that could be considered to strengthen the impact for existing children, families, staff and the wider community of stakeholders working with autistic children.

7.1   Impact on children's development

Analyses of the IEP records and child data found that most children showed improvement across the indicators between their first and second assessment. The indicator-focused analyses found that children, on average, were more likely to improve on Transitions and Routines, Group participation; Understanding and Use of Language; and less likely to improve on Fine motor, Gross motor, and Emotions. The findings from the child-focused analyses found that some groups of children were more likely to improve, or improved more, across some of the domains. Some key findings include:

- Children from a language background other than English were more likely to improve on the majority of indicators within a domain, compared with those not from LBOTE.

- Children in ASD Level 1 and 2 were more likely than Level 3 to improve on the majority of indicators for most domains.

- Across most domains, children from Priority Access Group 2 were the most likely to improve on the majority of indicators within a domain.

- Children with a greater duration between assessments (9-22 months) were more likely to improve on the majority of indicators than those with a shorter duration between assessments (4-8 months).

- Children who were 3 at the time of their first assessment showed greater improvements between their first and second assessment, particularly Domain 1 (Transitions and Routines), Domain 2 (Social skills), Domain 3 (Group participation), Domain 10 (Understanding) and Domain 11 (Use of language).

- Domain 1 (Transitions and routines) is identified as an important element for supporting children in their transition to school. The findings from the data were overall positive, relative to other domains.

- Overall, children appeared to show the least improvement on average in Domain 7 (Gross motor), Domain 8 (Fine moor skills), and Domain 9 (Emotions). For Domain 7, this can be attributed to many children being able to perform these indicators independently at the time of the first assessment.

These findings appear to be consistent with other literature looking at the impact of autism-specific ECEC on children's social and emotional development. As noted in Section 5, the use of standardised tools to complement SDN Beranga's existing IEP Assessment Tool would allow for longer term monitoring and evaluation. This would be especially important to assess whether changes to the delivery model make a difference for children's and families' outcomes.

7.2 Strengths of the SDN Beranga model

In addition to children's outcomes, the experience and outcomes for the families are also integral to the Beranga model. As the interviews with families and stakeholders demonstrate, the Beranga model has a number of strengths. These program strengths outlined below are consistent with the literature in relation to the key principles of evidence-based early intervention in autism, which identify individualised assessment for intervention planning, individualised programming, family-centred practice and support for transition to school as being key elements of effective practice for supporting autistic children and their families (Prior et al., 2011).

7.2.1 Low ratios and child-centred approach

The qualitative findings demonstrate that SDN Beranga's low ratios and child-centred approach are aspects that are valued by all families. Consistent with the literature about good practice models (Prior et al., 2006, 2011), SDN Beranga operates at a 1:3 ratio. This is higher than the recommended 1:4 ratio adopted in other autism-specific services, including the Australian funded ASELCC (Gendera and Katz, 2019). As noted by stakeholders, and recognised in family interviews, the high ratios and low numbers in each room (9) allow educators to better meet the individual needs of the children, many of whom have high needs.

7.2.2 Consistency in classroom groupings and educators

The change from a long day care to preschool model changed the enrolment patterns for children, and also the work environment and conditions for educators. While there are some challenges identified with this model (notably, shorter hours and limited availability for families), stakeholders identified some benefits of this model for both children and educators. These benefits included consistency in classroom cohorts and staffing arrangements. The model was also identified as a strength for staff by the majority of stakeholders as educators have consistent rosters and groups of children throughout the week.

7.2.3 Communication between SDN Beranga staff and families

Families valued the thorough orientation and induction process for children and families. It made them feel comfortable leaving their children at SDN Beranga. Involvement of families in the development of IEPs, as well as informal meetings and communication encourage families to be part of their children's learning and development. Communication at drop-off and pick-up time allowed for smoother transitions to and from preschool and home.

Overall, families talked positively about the communication among educators, therapists and, in some instances, other services. There were, however, both families and stakeholders who

identified the challenges of communicating with all parties, and suggestions that the use of a consistent communication tool or mechanism could further enhance the quality of communication among families, educators, therapists and mainstream settings. One suggestion was a standardised template and process for families, educators, therapists and dual placement services to contribute to. The process and commitment to using the template would have to be agreed to by all parties to be effective.

7.2.4 Flexibility for SDN therapists to work with children in the classroom settings

The majority of children at SDN Beranga have an NDIS plan, and have funding for a therapist (speech therapists and occupational therapists). Some children have therapists through the SDN Children's Therapies team while others have external therapists. The existing SDN Beranga model allows families with therapists employed by SDN (from the Children's Therapies team) to coordinate visits on site at SDN Beranga, both in the clinic and in the classroom. This provides flexibility for therapists to support children in the classroom setting, and also to have sessions with the parent and child in the clinic. Collaboration with the SDN Children's Therapies team was valued and viewed as a positive element of the SDN Beranga model.

7.2.5 Support for transition to school

SDN Beranga's approach to supporting children in the transition to school is consistent with good practice identified in the literature. In particular, Roberts and Simpson (2019) note that specialised support for autistic children at major transition points, such as starting school, is a key element in autism early intervention best practice. Transition supports include teaching children school readiness skills; collaboration and communication with staff at the new school about the child's current skills and needs; and actively supporting transition to the new school through visits, visual supports and stories. The connection that Beranga has with the NSW Department of Education's Transition Support Teacher, Early Intervention is an integral part of the preschool's model in the assistance it provides to children and parents in connecting them with the most appropriate supports when they transition to school. This model very much aligns with Marsh et al.'s (2017) findings about parents and educators' views about best practice for school transition for children with ASD. The key areas identified are:

(1) The establishment of a transition team
(2) Parent involvement in planning
(3) Child and parent visit to school
(4) Visit support
(5) Placement identification
(6) Parent communication and information
(7) Teacher sharing between preschool and kindergarten teacher
(8) Child preparation
(9) Decision support
(10) Support identification
(11) Transition administrator to supervise and evaluation of the transition
(12) Peer, classroom and school preparation

These principles are also consistent with Chen et al.'s (2020) findings from qualitative research with parents and early intervention professionals, particularly the importance of connection with the system through communication integration and transition.

The support for transition to school is a valued and important component of the SDN Beranga model because children with ASD have more difficulty adjusting to school (Marsh et al., 2017). In addition to facilitating the process for families in finding the appropriate school and to ensure children are placed in the most appropriate classroom, which benefits the child and the school. The connection Beranga has with the Department of Education appears to be very strong and beneficial to all parties.

7.3 Challenges of the service model

Both parents and stakeholders identified some challenges and possible areas for improvement of the SDN Beranga model. Many of the challenges identified align with broader sector challenges, particularly recruitment and retention of qualified educators, as well as the challenges of navigating between the preschool and long day care market models.

7.3.1 Sustainability of the service model

The sustainability of autism-specific preschools (and school) is a common challenge identified in the literature, including evaluations and studies specific to the Australian context (O'Brien, 2014; Katz and Gendera, 2019). Literature reviews demonstrate that the ideal mode of delivery and mix of intervention to best meet the needs of autistic children remains unclear (Vivanti et al., 2014; Howlin et al., 2009).

Findings from the qualitative data, particularly interviews with stakeholders, and from the review of the literature demonstrate the high resource needs required to implement effective autism-specific services. There are high staffing costs associated with high ratios, as well as additional costs to providing family-centred care, and support to link families and children to other local services. With high staff turnover and difficulties recruiting, there is an ongoing need to invest in training and professional development in order to deliver a quality service to children and families. As noted earlier, the current free preschool funding in NSW creates some uncertainty as it does not cover the full cost of delivery of the service. Additionally, it should be noted that grant funding from the NSW Department of Education through the High Learning Support Need (HLSN) stream of the Disability and Inclusion funds has not been increased to keep up with inflation. Given the uncertain ECEC policy context in NSW, adaptations to the model to either increase the revenue, or decrease the costs of delivery, could be considered (see Sections 8.1, 8.3, 8.4).

7.3.2 Opening hours and hours per week

Recognising constraints of funding and policy, a number of parents and stakeholders identified short hours and limited days as a limitation of the model, both in relation to children's development and parents' participation in work or other family needs. The opening hours were identified as a challenge for a number of families, both in terms of the short hours being a barrier to workforce participation, and also in terms of their desire for their child to attend Beranga for more hours per

week in order to better support their development. Available literature suggests that 15 to 25 hours/week over 2-3 years is generally recommended for autism early intervention (Roberts and Prior, 2006). It should, though, be acknowledged that SDN Beranga is not an early intervention service, but rather an autism-specific early childhood education and care service.

There are, however, weaknesses to extending hours, namely the impact on staff recruitment and rostering, and the potential flow on effect for managing consistency in educators and daily routines for children, who often find transitions and change difficult. Extended hours could be achieved for some families, or for some days per week, through consideration of extending autism-specific services to other SDN preschools or long day care centres, as was introduced in the SDN Ultimo Long Day Care centre (noted in Section 8.1), which then transferred to the SDN Lois Barker centre.

7.3.3 Staff turnover and training

One area identified as a challenge is the need for training and professional development for staff, which is exacerbated with high levels of staff turnover. It is recognised that SDN has a strong induction program, including autism-focused training, and training in communication tools and relationship building. While potentially complex or risky, financial support for qualifications and upskilling could be considered as an incentive for educators to remain at SDN Beranga.

Findings from the qualitative data, particularly interviews with stakeholders, and from the review of the literature demonstrate the high resource needs required to implement effective autism-specific services. There are high staffing costs associated with high ratios, as well as additional costs to providing family-centred care, and support to link families and children with other local services. With a high staff turnover and difficulties recruiting, there is an ongoing need to invest in training and professional development in order to deliver a quality services to children and families. This is discussed further in Section 8.2.

7.3.4 Continuity and support for children attending mainstream ECEC services

As noted in 7.2.3, families were overall very satisfied with the communication among educators, therapists and educators from mainstream services. It was, however, identified that one of the gaps resulting from the change in delivery models is the loss of connection and capacity building with dual-placement services.

A number of the stakeholders identified that educators in mainstream settings are lacking in knowledge of autism and the skills needed to work with children with additional needs more broadly. Aylward and Neilsen-Hewett's (2021) study of an evidence-based early intervention model for children with ASD in mainstream ECEC settings found that a targeted professional development program had positive impacts for children as well as educators working in mainstream settings.

The SDN Beranga Satellite Program, under the previous model, was designed to ensure children had options to transition to mainstream centres that were also supported by staff in the program. As this program could not continue as a result of the loss of ADHC funding, this gap is being felt by

stakeholders. Additionally, since the introduction of free preschool by the Department of Education and the removal of fees, there has been an increase in children staying the maximum allowable length and thus limiting options to transition children to mainstream ECEC settings.

This challenge, and possible ways to address it, is discussed further in 8.3.

7.3.5 Individualised approach to NDIS means some children miss out on therapy

The introduction of the NDIS meant a shift to individualised funding packages. This gave families choice and control over service delivery, but it meant a loss of funding to services such as SDN Beranga. In this context it was no longer possible to fund a dedicated therapist to work across SDN Beranga. Contrasting against the previous model, a couple of stakeholders noted that there are some children that miss out under the current model, especially if they do not have an NDIS plan. All children who enrol in Beranga have a confirmed diagnosis which means they should be eligible for NDIS funding. However, some children are not eligible due to immigration status or because they are on a waiting list to receive therapy. In some instances, educators at Beranga had fewer individualised tools or practices to work with children who did not have NDIS support. It is worth noting, however, that children are still eligible to enrol at SDN Beranga regardless of whether they receive NDIS support.

It was also identified that employing a part-time therapist to work across the rooms as a resource or consultant to support educators with all children would improve the capacity of educators, and possibly fill a gap for children and families who are not receiving individual therapy sessions. It is recognised this would be a significant cost to SDN and it is potentially only feasible through the restructure of other roles, funding changes and/or increased fees. Until access to the NDIS improves, and in particular, the long waiting lists for access to therapy, families and services such as SDN Beranga will continue to bear the cost of additional support.

8 Considerations for future service delivery

Drawing on the findings presented in the previous sections, this section presents options for changes to practice and service delivery. It also recommends that SDN reconsiders what data is collected and how child and family outcomes are measured. A monitoring and evaluation plan will support SDN to continue improving its service delivery for families at Beranga, and SDN services more broadly.

The options presented below have been developed through analyses of the qualitative and quantitative data, as well as through the review of policy and the literature on effective models of service provision for autistic children and their families. It should be noted that much of the recent literature and policy advocacy emphasise the benefits of inclusive settings for autistic children (for example, see Mackenzie et al., 2016; Aylward and Neilsen-Hewett, 2021). This is somewhat in tension with findings from the qualitative interviews that demonstrated parents' overwhelming satisfaction with SDN Beranga and how they valued its autism-specific setting.

Within these constraints, there are some possibilities for adapting the existing model to both build on the strengths, as well as address areas for improvement identified in the interviews and literature that would support SDN Beranga as a leader in developing innovative practices for working with autistic children and their families. It is understood that some of the recommendations may not be feasible due to regulatory and/or resource constraints.

8.1 Extending autism-specific programs to other SDN ECEC sites

Autism-specific preschools are resource-intensive services, particularly in the staffing requirements needed to provide individualised care and education for the children. There is mixed evidence about the most effective delivery model, either in autism-specific or inclusive settings. It is also understood that there is high demand for autism-specific services, and that some children may benefit from an inclusive setting, or attending mixed settings. Within this context, it is recommended that SDN considers how the existing model could be adapted to provide autism-specific supports to more children. This could be achieved through providing more places for autistic children at mainstream SDN ECEC services, supported by appropriate professional development for educators in those services (also see Section 8.2). This model would be consistent with Stephens et al.'s (2016) finding that "non-specialist staff can deliver early intervention in outlying mainstream settings […] when supported by specialist staff" (p. 81). This is also an effective way to increase the capacity of the workforce in mainstream settings. A first step to this approach could be to review practices for working with autistic children at mainstream SDN services and consider how Beranga's model could be adapted to more settings.

An alternative approach to expanding the Beranga model to reach more autistic children within an inclusive setting is to adapt aspects of the model to existing SDN services. There are various ways such a program could look. One example would be to have one autism-specific room within a long day care service that allows for periods of the day with autism-specific programming and periods of

the day with mixed settings. It is recognised that SDN recently established an autism-specific program within a long day care service.

SDN Ultimo Autism Specific Program

In 2022, SDN Ultimo Children's Education and Care Centre launched the SDN Ultimo Autism Specific Program. The program builds on the expertise of SDN and provides early childhood education for up to eight children each day from Tuesday to Friday. It takes place in a purposely equipped preschool room within SDN Ultimo Children's Education and Care Centre. Children in the program have access to qualified staff and the program will operate with one staff member for every four children, compared with the usual preschool ratio of one staff member for every ten children. The children will be fully included as part of the SDN Ultimo community. It is recommended that SDN Ultimo, and other SDN autism-specific or targeted programs develop monitoring and evaluation tools to ensure SDN has the data required to assess the outcomes of the programs.

In 2023, the program transferred to SDN Lois Barker Education and Care Centre in Waterloo, after the closure of the SDN Ultimo centre.

While there is ongoing debate about the best model and approach to meeting the needs of preschool-aged autistic children and their families, there is extensive research examining the outcomes of early intervention programs for preschool aged autistic children in autism-specific versus mixed or inclusive settings. The literature is largely inconclusive about the differential impacts of different settings on children's development (Vivanti et al., 2014; Howlin et al., 2009). However, a number of studies conclude that early intervention models are effective in inclusive settings. Gendera and Katz (2019) synthesis report of Autism Specific Early Learning and Care Centres (ASELCC) services also found that high quality Autism intervention can be delivered in community settings, such as long day care and mainstream preschools, with appropriate funding (Gendera and Katz, 2019).

Vivanti et al. (2019) examined the feasibility and preliminary effectiveness of delivering the Group-Early Start Denver Model to autistic children in inclusive versus specialised classrooms. The Early Start Denver Model (ESDM) is a 'manualised evidence-based early intervention involving a set of teaching procedures and a curriculum designed to address the needs of preschoolers with ASD" (p. 1166). The study found that the delivery of the Group-Early Start Denver Model in an inclusive setting appeared to be feasible, with no significant differences in teaching quality and child improvements when compared to delivery in specialised classrooms. The study supports the feasibility of delivering the intervention in an inclusive setting, but notes that considerable investment in staff training was required (Vivanti et al., 2019, p. 1172). They recommend further research into the resources required to ensure fidelity in intervention delivery.

Nahmias and colleagues (2014) examined the association between placement setting (autism-only, mixed disability, or inclusive) and cognitive outcomes upon entry to primary school. They found that cognitive outcomes for children in inclusive placements were better than those of children in mixed disability settings. They suggest that the opportunity to interact with typically developing peers provides greater benefits for certain subgroups of autistic children – those with initially greater social impairments, greater adaptive behaviour impairments, and at least a baseline

level of language skills – who showed greater benefit from being in an inclusive placement. These findings must be considered with caution as they are based on prescribed program models, such as the Early Start Denver Model (ESDM). Vivanti et al. (2019) study also found similar developmental outcomes for autistic children receiving ESDM in an autism-specific vs inclusive setting. Vivanti et al. (2019) also found that the mothers in both settings experienced a reduction in stress.

Any options to extend or adapt autism-specific or inclusive settings in SDN ECEC services would of course need to be considered within SDN's broader vision and service capacity.

8.2 Enhanced training and professional development for SDN Beranga staff

Through the interviews with staff, stakeholders and parents, it was identified that an autism-specific approach to service delivery is at the core of SDN Beranga's approach to child- and family-centred learning. While it is understood that autism-specific training is provided as part of the induction program for new staff, it was also noted that there is an ongoing need for staff to attend professional development and obtain formal qualifications where feasible.

One area identified to facilitate practice changes is ongoing investment in training and professional development for staff. It is recognised that SDN has a strong induction program, including autism-focused training. While potentially complex or risky, financial support for qualifications and upskilling could be considered as an incentive for educators to remain at Beranga and thereby reduce staff turnover. From internal and external stakeholder interviews it is understood that SDN Beranga has strong relationships with a number of local child and family services, such as the STaR Association. These partnerships are important and could perhaps be used to strengthen professional development through knowledge exchange and referrals.

Professional development and training could focus on Beranga staff, or also SDN staff more broadly in the context of extending an autism-specific program to mainstream SDN services and supporting autistic children in inclusive settings (see Section 8.1).

8.3 Re-establishing connections with mainstream ECEC services

The previous SDN Beranga model operated as an outreach service, with satellite services. An outreach or hub and spoke model has a number of benefits, including reaching more autistic children in the community, building the capacity of the broader ECEC workforce, and providing more visibility to Beranga as well as SDN as a whole.

The review of the literature identified that 'hub and spoke' and other outreach models are effective ways to build the capacity and knowledge of staff working in mainstream settings and benefit children because they reach more autistic children. Two examples were the ASELCC service in Tasmania, where children in both the 'hub' and 'spoke' services were found to benefit from the early intervention. The model allowed for referral and movement of children between the service network depending on the children's and families' needs (Stephens et al., 2016). Another study,

based on an autism specific outreach model in the UK, found that the outreach model improved knowledge and understanding of autism across all levels of staffing (Reed, 2019).

It is recognised that funding and supports through the Commonwealth and NSW governments are in place to support long day care centres and mainstream preschools respectively, and thus SDN would need to navigate what this model would look like to build on Beranga's strengths, build capacity of Beranga's staff, and for the sector as a whole.

8.4   Capacity building for parents

There is wide consensus in the qualitative interviews and in the literature that parents' involvement in their children's care and education is critical in supporting the developmental needs of autistic children (Wicks et al., 2021; Bentenuto et al., 2020; Cassidy et al., 2008). A review of the research from the ASELCC centres found that "targeted supports, such as training and mentoring can play an important role in mediating parental levels of stress and perceived self-efficacy" (Katz and Gendera, 2019).

It is understood that prior to the COVID-19 pandemic, there were more opportunities for parents to physically enter the centres and communicate informally about strategies for working with their children. There were also more formal ways to share information through information nights. It is recommended that such practices be redeveloped and formalised through policies and procedures.

There are a number of evidenced-based tools and interventions that show positive effects for parents. These include:

- **Play and Language for Autistic Youngsters (PLAY) Project Home Consultation intervention program**. This intervention involved PLAY consultants coaching caregivers monthly for 12 months to improve caregiver-child interaction, in addition to the usual community services that the child was accessing. Using standardised scales, the findings showed that PLAY parents significantly improved in their abilities to sensitively respond and effectively engage their child; PLAY children's interaction skills within the home improved with increased shared attention and initiation; and PLAY children's social-emotional development significantly increased. PLAY parents' stress did not increase and PLAY parents showed a significant reduction in depressive symptomatology when compared with the parents who did not receive the PLAY intervention. The study authors conclude by noting that the PLAY intervention "offers communities a relatively inexpensive effective treatment for children with ASD and their parents" (Solomon et al., 2014, p. 484).

- **Parent and school-based intensive intervention** that comprised of specific activities for 4-6 hours/week at the clinic (akin to existing therapies through NDIS), at least 2 hours/week involvement from parents in the therapy room and meetings twice per month between therapists and parents using video feedback to provide strategies to manage the children's behaviour, and one hour meetings with the school educators to share specific intervention objectives and to organise appropriate play activities (Bentenuto et al, 2020). It is recognised that the latter is likely already being done at Beranga in line with the IEP meetings.

- **Family-centred intervention** aimed at promoting social inclusion, with fortnightly home visits from an experienced ASD practitioner over a 12-month period. These visits provided insights into the challenges children faced in relating to other children, coping with change, awareness of dangers, and joining in community activities. They also highlighted the challenges that many parents faced when trying to manage their child's behaviour, spending time with their other children and taking their child out of the house. The practitioner implemented a family-centred plan that introduced the child to various community activities in line with their learning targets and wishes. Quantitative and qualitative data showed improvements in the children's social and communication skills, their personal safety, and participation in community activities. The practical and emotional support provided to parents increased their confidence and reduced stress within the family. Parents and siblings' opportunity to participate in fun activities with their sibling also strengthened family bonds. The authors conclude by emphasising the importance of post-diagnostic support for children with ASD and their families and assert that their intervention offers an effective means of providing home-based community support to children and families (McConkey et al., 2020).

Any significant change to SDN Beranga's approach to support families would likely mean a change to its service delivery model, and would require additional assessment of the risks, benefits and service outcomes. The models above are included as examples. It is recognised that SDN Beranga operates as an ECEC service, as opposed to an integrated child and family centre and some service adaptations are not feasible within the current service model.

Parent engagement is identified by some parents and through the literature as a critical component of effective service delivery for autistic children. It is proposed that SDN can build on the strengths of its current communication and relationships with parents (See Section 7.2.3) to develop innovative ways to engage and build the capacity of families. This is in line with recent literature (Wicks et al., 2021; Cassidy, 2019), which emphasises the importance of focusing on parents' confidence, capacity and wellbeing.

8.5 Data collection and measurement scales

Through the review of the literature, a number of standardised assessment tools and developmental scales have been identified as having the potential to improve the capacity of SDN to monitor and evaluate the child and family outcomes in the future. The SDN Beranga IEP Assessment Tool brings together multiple indicators across 12 domains which focus on outcomes in the Early Years Learning Framework. As mentioned earlier, the tool was designed to ensure SDN Beranga meets its requirements under the National Quality Framework, the National Quality Standards as well as its funding requirements. Whilst it is understood that the IEP Assessment Tool ensures SDN Beranga meets the above requirements, a standardised tool could be better utilised by the SDN educators also allowing for more rigorous research and evaluation. Through the review of the literature, the researchers have identified the following standardised tools that could be used by both educators and in some cases parents, to assess and monitor children's change across different developmental areas (Stephens et al., 2016).

- Child outcomes: assessments used in other similar Australian autism-specific settings (Stephens et al, 2016)
    - Vineland Adaptive Behaviour Scales-II: a measure of adaptive behaviours and maladaptive behaviour
    - Social Communication Questionnaire: an indicator of autism severity
    - Mullen Scales of Early Learning: a measure of development or cognitive skill
    - Preschool Language Scale (4th or 5th edition): an interactive assessment of developmental language skills

In line with the findings above in relation to the importance of early intervention for parents with autistic children to i) support their children's development and ii) to mitigate their stress and support their own wellbeing, it is recommended that more consistent data be collected about parents' knowledge of their children's strengths and needs, and also about their own wellbeing (Adams et al., 2019; Wicks et al., 2021). Using standardised tools or scales to collect this data about parents would strengthen the capacity to evaluate the impacts of SDN Beranga's model on parents in the future. One scale identified in the literature, and used in an Australian context, is the Family Outcomes Survey-Revised (FOS-R). This scale focuses on five outcomes for families:

- Families understand their child's strengths, abilities and needs
- Families know their rights and advocate effectively for their child
- Families help their child develop and learn
- Families have support systems
- Families are able to gain access to desired services and activities in their community (Bailey et al., 2006).

Wicks et al. (2021) used data from the Longitudinal Study of Australian Students with Autism (LASA) and found that child characteristics did not independently contribute to explaining FOS-R outcomes or perceived helpfulness of early intervention once parent and family characteristics were accounted for. The authors emphasised the need to give greater focus to parent and family factors in early intervention practice and evaluation. In particular, low education levels and low income/SES were identified as factors contributing to higher parental stress among parents with autistic children.

They conclude that "this finding is important as it suggests that rather than positioning the child first when considering EI, primary consideration should be given to the parents, followed by the child, within the family system" (p. 17). Furthermore, Wicks et al. "recommend that EI service providers utilize the FOS-R as a review and evaluation tool to monitor parent satisfaction with the services they receive and identify at-risk families to address their specific needs" (p. 19).

Adams et al. (2019) indicate that parent satisfaction is difficult to measure because of its subjectivity and wide variation in what is expected to be offered by a service. It is thus important to consider the broader benefits received by families, which are not necessarily captured in evaluating parental satisfaction. Using similar data as Wicks et al. (2021), which included children who had accessed either intensive or occasional home or centre-based early childhood intervention programs (including an autism-specific school) or received private therapies, adopting a standardised tool such as the FOS-R scale would allow SDN to compare the outcomes for Beranga parents with other cohorts of parents with autism in Australia.

It is important to note that the above FOS-R tool is not specific to early childhood and education settings, but rather a tool designed to assess how parents benefit from early intervention programs more broadly. In addition to considering how such a tool aligns with the objectives of SDN Beranga's service model, it would consider implications for staff, time constraints, possible duplication required as well as any specific training staff would require to use the tools. It is also important that any changes to data collection tools consider SDN's intended use and purpose of the data in the future.

9 Conclusion

The findings from this evaluation show that SDN Beranga Preschool is an effective ECEC service model for autistic children in the years before school.

The analysis of child data records examined outcomes for 66 children across 83 indicators, which were grouped into 13 domains, and 5 Learning Outcomes. The analysis looked at the change in assessment level, between 1 and 6 between a first (baseline) and second (follow-up) assessment, where 1 is 'performing independently' and 6 is 'not yet performing'. Levels 2 to 5 represent varying levels of assistance required, from prep time (2), verbal prompts (3), visual prompts (4) to physical assistance (5).

The findings showed that children, on average, improved across all domains. Children tended to improve more in:

- Domain 1: Transitions and Routines
- Domain 3: Group participation
- Domain 6: Dressing
- Domains 11, 12, 13: Language and Communication domains.

Other notable findings included:

- Children from a language background other than English were more likely to improve on the majority of indicators within a domain, compared with those not from LBOTE.

- Children in ASD Level 1 and 2 were more likely than Level 3 to improve on the majority of indicators for most domains.

- Children with a greater duration between assessments (9-22 months) were more likely to improve on the majority of indicators than those with a shorter duration between assessments (4-8 months).

- Children who were 3 at the time of their first assessment showed greater improvements between their first and second assessment, particularly in Domain 1 (Transitions and Routines), Domain 2 (Social skills), Domain 3 (Group participation), Domain 11 (Understanding) and Domain 12 (Use of language).

Variation in improvement across the domains and indicators is reflective of the diverse ages and stages of the children in the sample, including different ASD levels and time between assessments.

The qualitative interviews were overwhelmingly positive. The 15 family members interviewed as part of the evaluation valued the child-focused and individualised approach that SDN Beranga provided to their children. Parents talked about the cognitive, emotional and social improvements they observed during their children's time attending SDN Beranga. They reported that their children seemed happier at SDN Beranga compared with the mainstream services they attended. Overall, families were happy with the communication between SDN staff and the family, from the induction,

involvement in the IEP and day to day communication about their child's needs. Parents valued the flexibility of having a therapist attend the service, or to have a session at the clinic. They also highlighted the information and support provided during their child's transition to school as a strength of SDN Beranga.

Some families talked about the cost of SDN Beranga, as well as their preference for more hours/day or days/week of ECEC for their child. This finding should be considered within the broader service and policy landscape and potential options for service adaptation to better meet demand for the service.

In addition to families' satisfaction with the service, internal and external stakeholders also spoke highly of their experience working for or with SDN Beranga. Internal stakeholders, particularly educators, generally preferred the current preschool model as it provides more predictability with rostering and allows for more stability and stronger relationships to be formed with each cohort of children. Some stakeholders commented on the challenges of not having an integrated therapist and the impact this has on children who are not eligible for NDIS, or whose therapist is not part of the SDN Children's Therapies team. Stakeholders talked about the benefit of integrated therapists for both children's development and educators' capacity building.

One challenge the qualitative interviews highlighted was the recruitment and retention of educators. This challenge is not unique to SDN Beranga; however, it was highlighted that the skills and experience needed to work in an autism-specific setting can be difficult to recruit, and can also exacerbate burn-out, which is common across the ECEC sector.

Given these strengths and challenges, Section 8 proposes five options that could be considered for future service delivery. In particular, ongoing investment in staff training and retention incentives are critical to SDN Beranga achieving its outcomes. Consistent with the literature, there were calls by some parents for increased capacity building and information sharing for families. One identified strength of the previous SDN Beranga model was outreach and capacity building through the satellite model. While it is recognised that this exact model is resource intensive and likely not feasible within the funding and regulatory constraints, SDN could consider how to connect with local mainstream ECEC services, particularly where children attend dual placements. With the success of the SDN Beranga model, it is also worth considering how SDN could expand its delivery of autism-specific approaches and practices to other SDN services.

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Appendix A: Interview topic guide

1. **About your child and family**

2. **About Beranga Preschool**
   - o How you found out about Beranga Preschool
   - o Your patterns using Beranga

3. **Induction and starting Preschool** (e.g. communication to parents)

4. **Overall satisfaction with Beranga Preschool**
   - o The best parts of Beranga Preschool
   - o Areas you wish were different/could change (days/hours, cost, location, type of support, staff turnover?)

5. **Support from Beranga**
   - o Preschool educators – how do they communicate with you? With therapists?
   - o Therapy – SDN or external therapists
   - o Family support/training – what other skills/supports would help you as a parent? Have they ever had contact with SDN's Family Resource Worker?

6. **Child Outcomes and role of SDN**
   - o Do you think your child cognitive and emotional development and wellbeing has improved while at Beranga?
   - o Do you have an example of how they've developed/progressed?
   - o How do you think the educators supported this development?

7. **Use of other services**
   - o Does your child attend any mainstream child care services? If yes, is there communication with Beranga?
   - o Do you use external therapists? Has Beranga referred you to these services?

8. **Plans and expectations about care and education for your child**
   - o How long you plan to be at Beranga
   - o Transition to kindergarten – how does/can SDN help you through this process?
   - o Any final comments? Other things you'd like to raise?

Appendix B: Survey questions

SDN Beranga Research Survey

Consent **Participant Information Sheet**

SDN Beranga Research Survey

This sheet has information about research being done with families attending SDN Beranga Preschool Research means finding out what people think about things and using the information to help other people. You can ask someone you trust to help you understand this sheet.

Who is doing the research? What is it about?
My name is Ilan Katz. I am a researcher at the University of New South Wales. I am working with Liz Adamson and Sandra Gendera. We want to find out about your experiences using SDN Beranga Preschool What does taking part involve? We are inviting you to participate in a short survey. Taking part involves filling in a few questions about:
        How long your child has attended SDN Beranga Preschool   How satisfied with your time at SDN Beranga Preschool
You can say no if you don't want to answer a question. You can do the questions whenever you want to. It will take about 5 minutes.
We will also ask you in the survey if you would be willing to participate in an interview.

Do I have to take part?
 You only have to take part if you want to. You can say no. It's your choice. No one will be angry if you say no.
 Even if you say yes, you can change your mind later and stop taking part.
 If you choose not to take part in the survey, you can still participate in other parts of the SDN Beranga Research Study (an interview or sharing of your child's de-identified data records)

What will happen to my information?
 We will store your information at the University of New South Wales for 5 years
 We will keep your information private.
 We will not tell anybody your name or where you live.
 No one will know it was you who took part.
 We will write about what we find out.
 If you want, we will send you a summary.

I want to take part
If you want to take part, click 'YES, I want to take part in the survey' and click the arrow button to start the survey. If you press 'No, I don't want to take the survey', you will be directed to the next page to let us know if you would like to participate in an interview instead. If you change your mind you can close the page at any time, and we will not use your information. When you finish, we will use your information.

If you have any questions, get in touch with:

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If you want to complain about the research, you can get in touch with the Human Research Ethics Coordinator. It is their job to listen to you and find out what happened.
Phone: (02) 9385 6222
Email: humanethics@unsw.edu.au
Tell them this number: HC210643

　❍ Yes, I would like to participate in the survey

　❍ No, I do not want to participate in the survey.

Q1 How did you find out about SDN Beranga Preschool?

　❍ I was referred to the Preschool by another services (i.e. GP, allied health, school, childcare)

　❍ A friend/family member referred me to the Preschool

　❍ I found out about it myself

　❍ Other

Q2 How long has/did you child attend SDN Beranga Preschool?

　❍ 0 to 3 months

　❍ 4 to 6 months

　❍ 6 months to 1 year

　❍ More than 1 year

Q11 Does your child access any of the following services?

☐ NDIS funded therapy with SDN

☐ Therapy with another provider

☐ Another childcare or preschool, in addition to SDN Beranga

☐ Other

Q3 How well do SDN Beranga Preschool staff and therapists work together?

○ 1 - They do not work well together at all
○ 2 - They work together sometimes
○ 3 - They mostly work well together
○ 4 - They always work well together
○ 5 - Unsure

Q8
Thinking about what's important to you when choosing a preschool or early childhood service, please rank in order what is most (1) to least (5) important for you.

TIP: Please drag and drop the items so that the most important (1) is at the top of the list and least important (5) is at the bottom of the list.

_____ Location
_____ Cost
_____ Opening hours
_____ Autism-specific programming and staff
_____ Other

Q9 Has SDN Beranga Preschool helped you and your family feel: (select all that apply)

☐ included in your community

☐ that you have opportunities to participate

☐ that you are listened to

☐ a sense of connected with others

☐ a sense of safety

Q10 Is there anything else you would like to tell us about your experience at SDN Beranga Preschool?

_____

Q6
We are also conducting **interviews** with families from Beranga Preschool.

If you are interested in talking with a researcher about your experience at Beranga please click HERE to include your name and contact information. This ensures your survey questions above remain anonymous.

 The interview would take place at Beranga Preschool (or by phone). It would take approximately 45 minutes. You would receive a $50 voucher for participating in an interview.

Appendix C: Detailed methodology for analysis of child data records

Using the SDN Beranga IEP Assessment Tool developed by SDN Children's services, the research team assessed children's development across a number of categories between their first (initial) and second (follow up) assessment. Where possible, we identify differences in developmental outcomes, or progress, across different demographic characteristics and age, and the extent to which the changes or improvements can be linked to children's ASD Levels, age and time in between assessments.

For most of the categories, a 6-point scale is utilised from 1 (Independent) to 6 (not yet performing)

- o   1=Independent
- o   2=Prep time
- o   3=Verbal
- o   4=Visual
- o   5=Physical
- o   6=NYP

The research team undertook the following steps to produce two key sets of measures:

1. **Indicator-focused measures**: the average change across all children for each of the 83 indicators between the first and second assessment. 'Change' refers to the difference between their first and second rating on the 1 to 6 scale, noted above.
2. **Child-focused measures**: a measure of the proportion of children that improved on the majority of indicators between their first and second assessment, by domain.

The following steps were undertaken to calculate the **indicator-focused measures**

1. Calculated change for each child across each indicator
2. Used the Excel formula to calculate the average change for each indicator
3. Grouped these indicators into domains to present the results

The following steps were undertaken to calculate the **child-focused measures**:

4. Calculated change for each child across each indicator
5. Copied change for each child across each indicator to the master list (that includes demographics)
6. Grouped items into Domains
7. Counted the number of items where there was a POSITIVE change (1 and above)
8. Calculated the number of cases/children where there was a positive change across the majority of indicators in that domain (i.e. 4 indicators, majority = 2 or more, 7 indicators, majority = 4 or more).
9. Limitation: The analysis is focused on any improvement across each of the indicators, not the amount of improvement. So going from 4 to 3 treated the same as going from 6 to 1.
10. This produced a number count for each domain for the number of children who improved on the majority of indicators within each domain.

The domain **Purpose and form of communication** required a different approach because this section of the tool was designed differently with support of a speech therapist working with the team at SDN Beranga. Therefore, to analyse children's development in this domain the research team worked with SDN Children's Services to interpret the reported indicators and ratings. The indicators were broken up into 4 groups:

> 1. early communication which focused on non-verbal communication attempts such as eye gaze, gestures and vocalisations to indicate wants/needs.
>
> 2.a) Single Word and learned phrases, this area measured simple speech-based communication.
>
> 2.b) KWS and Visual System where the child's primary output of communication was an alternative to speech. For example, Picture Exchange Communication System (PECS), Augmentative and Alternative Communication (AAC) devices.
>
> 3.Complex language system (speech or alternative) focusing on conversational use of language and adaptation of grammar and context.

In order to reflect the discussion with SDN the researcher re-entered the data for forms and purpose of communication according to a scale.

- For the initial assessment of form of communication (1, 2a, 2b, 3), the numbers were converted to 1=1, 2a=3, 2b=2, 3=4. It is recognised that 2a is not necessarily more advanced than 2b, however in order to assess change it was necessary to give these a value
- For purpose of communication narrow range was given a value = 1, and wide range=2.
- So for each assessment (first, second) the two scores were added to provide a combined score. The maximum would be 6 (4+2) and the minimum would be 2 (1+1).
- It is expected that most children would stay the same from one assessment to the next: while they may progress on the 'form of communication' from 1 to 2, or 2 to 3, it is expected that they would stay the same or reduce the range of communicate from wide to narrow.[2]

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[2] Following the exercise it is noted that one child (HN) has a negative change, in that they went from 2a basic language narrow range (3+1=4) to 1 early communication wide range (1+2=3). This appears atypical and will be considered in the context of other IEP data and characteristics.

Appendix D: Summary of IEP Outcomes, Domains and Indicators

Outcome	Domains	Indicators
Learning Outcome 1: Children have a strong sense of identity	Transitions and routines	Transitions in and out of centre
		Separates from caregiver
		Transitions between activities
		Follows routine instructions
		Copes with unexpected transitions (wet weather, fire drills)
		Complies with finish instruction
		Recognises own belongings
		Packs away
		Carries own bag and puts in locker
		Puts drink bottle in tray
Learning Outcome 2: Children are connected with and contribute to their world	Social Skills	Engages in solitary play
		Plays with other children in their space
		Plays with adults
		Joins in play with other children
		Waits for a turn
		Asks for a turn
	Group participation	Remains in location during group times for up to 5 minutes
		Engages in scheduled activities
		Participates in a small group (3-4)
		Participates in a whole group
Learning Outcome 3: Children have a strong sense of wellbeing	Mealtimes	Sits during meals
		Eats a variety of fruit/veg
		Eats a variety of meat/dairy/legumes
		Eats a variety grains/starches
		Eats a variety of textured foods (smooth, crunchy, chewy)
		Willing to try new foods
		Finger feeds
		Feeds self with spoon/fork
		Drinks from cup/drink bottle
	Toileting and hygiene	Indicates awareness of wet or soiled nappy
		Sits on toilet
		Urinates in toilet on timed schedule
		Voids bowels in toilet
		Initiates for the toilet (takes self, requests)
		Independently follow all steps of toileting routine
		Thoroughly washes hands
		Wipes own nose
		Notices when dirty
	Dressing	Removes shoes and socks
		Pull pants up and down
		Completely undresses
		Puts on shoes
		Puts on clothes

		Dresses with correct clothing orientation
	Gross motor	Moves around space on their own without tripping/ falling/bumping etc
		Has good muscle tone and maintains good posture
		Demonstrates basic gross motor skills i.e. running, jumping, climbing, balancing
		Catches, kicks, throws and rolls ball (or similar object)
		Peddles and steers a tricycle
	Fine motor	Align and stack objects
		Use finger or hand to manipulate objects
		Uses two hands to manipulate objects
		Scribble or colour
		Hold pencil and/or paint brush
		Copies/traces lines/shapes
		Cut a long straight line with scissors
	Emotions	Manages frustrations without tantrums
		Self soothes
		Tolerates waiting for a desired item
		Describes own emotions
		Describes emotions in others
Learning Outcome 4: Children are confident and involved learners	Play	Sensory play with objects (mouths, feels, looks)
		Engages in people play (smiles, looks, laughs)
		Plays with cause and effect toys
		Completes close ended activities (ring stacker, shape sorter, posting)
		Plays functionally with toys e.g. pushes car, rolls ball, stacks blocks
		Plays w a variety of different toys
		Engages in pretend play on **self** (e.g. feeds self with spoon)
		Engages in pretend play on **others** (e.g. pretend to feed adult, brush dolls hair)
		Engages in object substitution e.g. tissue box as car, stirs with stick
		Completes 5-10 piece insert puzzle
		Sorts objects/toys into categories/ colours etc
		Matches picture and/or objects
Learning Outcome 5: Children are effective communicators	Understanding	Responds to name being called
		Responds to 'no' or 'stop'
		Follows routine instructions in context
		Follows non- routine instructions in context
	Use of language	Sings during familiar songs
		Imitates actions during songs
		Uses books functionally ie. Looks at pictures, turns pages
		Recognised letters
		Recognises words
		Can write own name
	Purpose and forms of communication	Communicates to protest
		Communicates to refuse or reject something
		Seeks attention
		Communicates social conventions e.g. greetings, show affection
		Engages in back-&-forth interaction
		Joint attention/shares interest
		Requests for help
		Requests more
		Requests an item

		Indicates 'yes' &/or 'no'
		Indicates a choice
		Responds to a question
		Asks questions
		Makes comments

Appendix E: Summary of ideas for adapting business model

Service model changes	BENEFITS	RISKS	ADDITIONAL RESOURCES REQUIRED (LOW, MEDIUM, HIGH)	POSSIBLE INCOME STREAM/S
Extending autism-specific program to other SDN ECEC sites including Long Day Care	Expands the number of children able to access autism-specific service Inclusive settings shown to benefit autistic children Opportunity of hub and spoke model More flexibility and options for parents	Program fidelity Higher costs – may not be financially sustainable Costs of resources and change of environment to adapt to children's needs Staffing	Medium-High: Possible need for renovation; staff changes Staff training Increased staffing Adapted environment and resources to meet specific needs	Higher fees
Re-establishing connections with mainstream ECEC services	Builds capacity of local ECEC sector Career building and mentoring for Beranga staff Benefits children in dual placements Supports training and skills of educators in mainstream services Community networking and visibility for Beranga	Time and resources required to make and maintain connections to services Time capacity of staff to deliver training High turnover of staff in ECEC makes connections challenging	Medium-high Staff time Financial costs for non – contact administrative duties Travel expense	Service training packages – charging fees

Enhanced training and professional development for Beranga staff	Improved outcomes for children Improved satisfaction for staff	Cost of training Cost of backfilling staff while at training	Medium: Staff time Cost of courses	Possible funding through grants
Capacity building for parents	Parents feel empowered Parents capacity to work with children at home increase	Increased staff costs	Medium: Time to engage with parents Staff time to produce resources and/or facilitate workshops	Open up to broader community and charge fees
Data collection and measurement scales	Improve capacity to monitor children's outcomes Improved staff skills and reflective practice	Staff not trained to adequately implement data tools Regulatory and compliance implications	Medium: Training in use of tools	N/A