The Autism Queensland Early Childhood Intervention (ECI) Approach

The evidence-informed specifics of the approach that Autism Queensland advocates and/or uses in its ECI services are as follows:

- The intervention must be **individualised**. There is tremendous variation in the manifestation of autism spectrum disorders from person to person, due to the individual's own personality, experiences and circumstances, as well as variability in the diagnosis itself. There are broad strategies that tend to be successful for most people with an autism spectrum disorder (ASD), but that success is dependent on that strategy being individually tailored to the child in question.

- The intervention must be **family-focussed.** That is, the goals the intervention is targeting have been identified and selected as important and meaningful to the parents/carers in terms of their perspective on the specific child needs of the child and family now and into the future.

- The intervention is delivered using a **transdisciplinary** ("team around the child" approach). The pervasive quality of autism spectrum disorders means the specific intervention for each child and family needs to be informed by knowledge from a wide range of professions. Disciplines of particular relevance are speech pathology, occupational therapy, psychology and teaching. However, it is not desirable to have all these individual professionals involved at the same time – this creates stress for the child and/or parent as a result of dealing with a large number of people, along with receiving significant amounts of information that may not easily fit together, plus recommendations that may seem conflicting. Of far greater value is each professional sharing knowledge and skills with these other disciplines, with the support from other professionals to discuss individual cases. This enables each professional to bring together all that knowledge to provide a tailored and seamless intervention for the child, along with useful and individualised information for the family.

- The intervention needs to be **positive.** The emphasis is on using enjoyable and motivating experiences to teach the child new and useful skills. Negative consequences to punish inappropriate behaviour are *not* used, nor is it appropriate, as punishment is based on the concept that the child knows what the right thing to do is and has the skills to produce this behaviour.

  The focus is on creating learning situations where the children and adults can also have *fun* with each other, supporting the children to view interactions with others positively and with enjoyment.

- The approach to developing skills and addressing behavioral challenges is **positive behaviour support (PBS)**. PBS sees the person's behaviour as having a function – behaviour is communication - and if the person is *supported*, by e.g., teaching him necessary skills and/or modifying the environment to reduce

stress, the inappropriate behaviour will not need to be displayed. A critical feature of PBS is therefore completing a detailed assessment to understand the function of the behaviour, then using that assessment information to design the appropriate intervention. The intervention focuses primarily on the antecedents to the behaviour (i.e., teaching alternative ways to achieve the same outcome as the inappropriate behaviour, environmental modifications to minimize stress that triggers the challenging behaviour, identifying escalation indicators and implementing calming strategies), not on responding to the inappropriate behaviour. Most importantly, the goal of PBS is to enhance the quality of life for the individual.

- The intervention must focus on the **development of functional skills**. This includes: functional communication skills (i.e., enabling the child to express and understand communication that is relevant and of interest to *him* – e.g., saying 'No', requesting items of special interest/motivation); the ability to engage with others; self-care skills; and behaviour that is useful and will improve quality of life in a variety of situations (e.g., waiting for a turn, coping with losing/not being first, asking for help, being able to sit for increasing amounts of time, awareness of personal space, self-organisation, self-calming strategies).

EVIDENCE-INFORMED APPROACHES USED AT AUTISM QUEENSLAND

Autism Queensland has a dedicated Research and Business Development Team and is an essential participant of the Cooperative Research Centre for Living with Autism (Autism CRC). The Autism Queensland Research and Business Development Team conduct research with a focus on education and therapy services for people on the spectrum, and disseminate information and evidence-informed reviews of interventions for people with ASD. This ensures staff are using evidence-informed practices and that they provide relevant and accurate information to families and external staff. Autism Queensland uses interventions that have been described as evidence-based for preschool aged children with autism spectrum disorder according to the report funded by the National Disability Insurance Scheme prepared by Roberts, Williams, Smith and Campbell (2016). It is expected that, as well having an in-depth knowledge of ASD, professional staff working in the Autism Queensland ECI teams have an understanding of the following evidence-informed approaches (this list is by no means exhaustive – staff are expected to be actively monitoring, following up on and sharing any new/previously unfamiliar material):

- **Positive Behaviour Support (PBS)**
  - The primary goal of PBS is to improve the quality of life of children by increasing their appropriate behaviours and adjusting the learning environment to prevent interfering or challenging behaviours from occurring (Neitzel, 2010).
  - Positive Behaviour supports may include evidence-based practices listed by Wong et al. (2014). Examples include:
    - ***Antecedent behavior intervention*** which involves the modification of the environments/context with the aim of changing or shaping a child's behavior
    - ***Functional behaviour assessment*** which is a systematic way of determining the underlying communicative function or the purpose of a behavior so that an intervention plan can be developed. This may include describing the interfering or problem behavior,

identifying the antecedents or consequences of the behaviour, developing a hypothesis of the function of the behavior and testing the hypothesis.

- ***Reinforcement*** which is used to teach new skills or increase behaviour
- ***Response interruption/redirection*** which involves the introduction of a prompt, comment or other distractors when an interfering behavior is occurring with the aim of diverting the child's attention away from the interfering behavior and results in its reduction.
- ***Self-management strategies*** which involves teaching children to independently regulate their own behavior by learning to discriminate appropriate and inappropriate behaviours, accurate monitor their behaviours, and reinforce themselves for behaving appropriately.

- **Development of communication skills**
  - This may include ***development of verbal communication skills***. Language training which has been listed as an established intervention by the National Autism Center (2015), makes use of strategies to elicit verbal communication including modeling, verbal, visual, and gestural prompts, cue-pause-point strategies, use of music to elicit verbalization, and reinforcement of verbal responses.
  - For children with limited speech, communication may be achieved through *assistive and* ***augmentative communication systems*** (AAC) (Prior & Roberts, 2006). Unaided AAC does not require any other resources than those which are already present in the person with ASD, and includes methods such as manual signing, pointing and gestures, while aided AAC involves the use of external devices or materials to improve an individual's functional communication (such as picture-based exchange systems or speech generating devices.)
  - ***Picture Exchange Communication System*** *(PECS)* is a form of AAC that involves teaching a child to pick up and exchange a symbol/picture for a desired object. Once the child is using symbols to gain an item, training progresses to picture discrimination, vocabulary extension and the construction of sentences. PECS has been described as an established evidence-based intervention by Wong et al., (2014).
  - The ***Hanen More Than Words Program*** may be used to empower parents to help children under 5 years to improve their social communication and back-and-forth interactions, play skills and imitation skills. This program was listed as having emerging evidence by Prior, Roberts, Rodger, Williams and Sutherland (2011).

- **Comprehensive behavioural treatment for young children.**
  - These programs which involve intensive early behavioural interventions that target essential skills which define or are associated with ASD, have been listed as established evidence-based practice by the National Autism Center (2015).
  - A comprehensive behavioural treatment that is offered by Autism Queensland is the ***Early Start Denver Model*** program (ESDM) which aims to facilitate the social and communicative development of young children with ASD. Core components of the ESDM include fostering positive affect, child-centred play, intensive teaching, replacing unwanted behaviours with

socially appropriate and adaptive behaviours and increasing family involvement (Rogers & Dawson, 2010). This program has been found to be effective in reducing the symptoms of autism, and improving developmental outcomes and receptive and expressive language in young children with ASD (most effective for children under the age of 4 years) (Dawson et., 2010; Vivanti et al. 2014).

- **Structured teaching**
  - The structured teaching approach focuses on organising the physical environment, developing individual schedules and making expectations clear and explicit, primarily through the use of visual materials (Howley, 2013). At school and home, the physical layout of the environments, visual schedules, visual cues, and work systems can be used to inform the child about what to do, where, when, with whom, for how long and what happens next. This enables them to function more independently with reduced direct adult prompting and cueing.
  - Some elements of structured teaching are listed as established evidence based practices. This includes ***schedules*** (usually visual schedules) which are listed as evidence-based by both the National Autism Center (2015) and Wong et al. (2014). ***Visual supports*** are also listed as evidence-based by Wong et al. (2014) and the NICE guidelines (Weitlauf et al. 2014). ***Independent work systems*** are listed by Wong et al. (2014) as an intervention with some support.

- **Modeling including video-modeling**
  - Modelling involves the demonstration of a desired target behavior that results in imitation of the behaviours by the learner. ***Live modeling*** occurs when a person demonstrates the target behavior in the presence of the child. ***Video modeling*** occurs when you pre-record a person demonstrating a target behavior. An advantage of video-modeling is that the behaviour is demonstrated in the same way each time that it is played.
  - Both live and video modeling are listed as established evidence-based practices by the National Autism Center (2015) and Wong et al. (2014).

- **Technology-aided instruction and intervention**
  - These interventions involve the use of technology as the central feature of the intervention. A broad range of devices may be used including speech-generating devices, smart phones and tablets (e.g., iPads™ and apps), computer assisted instructional program and virtual networks may be used. Students with ASD have been found to be more attentive and motivated, and learn more during computer-based learning, than traditional teacher-lead programs (Fletcher-Watson, 2014).
  - Technology-aided instruction and interventions are listed as established evidence based practices by Wong et al. (2014).

- **Accommodation of sensory issues**
  - Where children's sensory processing issues impact on their participation in daily life tasks, individualised strategies that suit the child are used to accommodate these issues.

- Examples include the use of ***regular movement breaks or exercise*** to help children to achieve an alert state, in which they are focused and able to respond appropriately. Exercise is listed as an established evidence based practice by Wong et al. (2014).
- ***Adaptations to environments such as classrooms and childcare centres*** can be used to accommodate sensory issues shared by many students with ASD by: (a) reducing extraneous stimuli, such as background noise or visual clutter; and b) increasing the salience of task-relevant input (e.g., presenting information in a clear visual format) (Ashburner, Rodger, Ziviani & Hinder, 2014).
- ***Behavioural interventions*** that have been successfully used to address phobic responses to the sensory properties of objects (e.g., the sound of flushing toilets) (McCord, Iwata, Galensky, Ellingson, & Thomson, 2001; Koegel, Openden, & Koegel, 2004) or extreme sensory seeking behaviours such as eating non-food substances (Hagopian, Rooker, & Rolider, 2011).
- Where children have ***picky eating behaviours associated with sensory sensitivities*** resulting in very limited diets, behavioual approaches may be used to expand the child's acceptance of a variety of foods (Marshall, Ware, Ziviani, Hill & Dodrill, 2014).
- Autism Queensland does not currently use interventions that aim to remediate or change the child's sensory processing style as interventions such as Sensory Integration Therapy and Auditory Integration Training have been described as unestablished by the National Autism Center (2015). A recent systematic review of weighted vests for individuals with ASD by Taylor et al. (2017) also concluded that this is not an evidence-based practice.

- **Social narratives or story-based interventions**
  - These interventions that describe social situations by highlighting relevant social cues and offering examples of appropriate responding. They are aimed at helping children to adjust to changes in routines and adapt their behaviours according to social expectations, or to teach specific social skills or behaviours. Social Stories™ (Gray & Attwood, 2010) are short stories that provide social information including the people involved, the skills expected, and the events that occur in a social context.
  - Social narratives or story-based interventions are listed as established evidence-based practices by the National Autism Center (2015) and Wong et al. (2014).

- **Development of functional skills**
  - AQ programs aim to maximize a child's potential to function (e.g., development of toileting, hygiene management, dressing and mealtime skills) using the evidence-informed approaches described above. These may include modelling and video-modelling, visual supports (e.g., pictorial sequences of daily living tasks), social narratives, reinforcement strategies and individual work systems.

Autism Queensland staff are expected to have an understanding of the following government services, policies and sources of evidence-base practices

- State and non-state educational services
- Relevant national and state curriculum information
- The National Disability Insurance Scheme (NDIS) – www.ndis.gov.au
- Autism Advisor Program (AAP), Medicare items and Early Days workshops.
- The Raising Children Network www.raisingchildren.net.au
- Autism CRC www.autismcrc.com.au
- The ASD online resource package for transition to Prep www.ahrc.eq.edu.au

For more information:
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