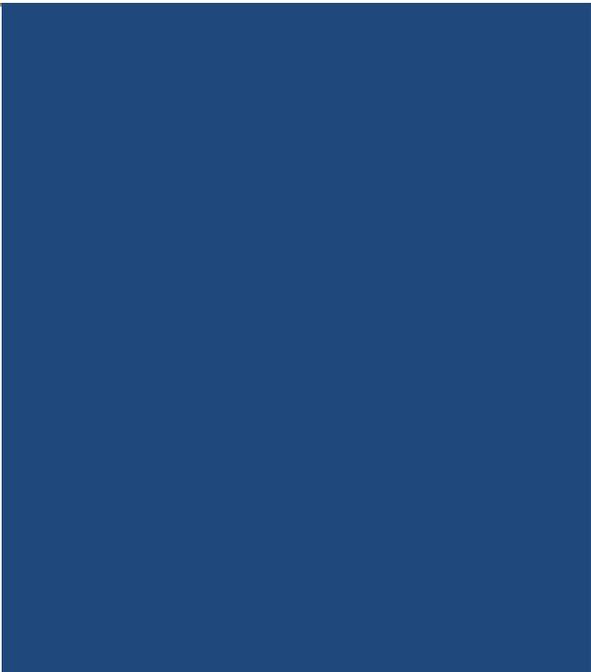


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Integrated Model for
Child and Family
Services and
Submission for
Centre Based
approach

Central Australian
Aboriginal Congress



Background

Congress is invested in improving health and developmental outcomes for vulnerable and at risk Aboriginal children in Central Australia. The successful implementation of several child programs has contributed to Congress developing a reputation as a leading service provider in this area. Running parallel to the development and implementation of these programs in recent years has been discussion about the need for a coordinated approach and the importance of continued investment to support child health and development. This dialogue has taken place at Cabinet, Executive, and Operational levels.

In 2006 a proposal was developed for a focus on Congress Maternal and Child Health Services which had an intensive focus on children aged zero to three. This vision of Congress Maternal and Child Health Service program was:

“ . . . to provide a comprehensive, proactive primary health care program which will provide families (*in Congress’ HSA*) with supportive and developmental antenatal and child health services which will contribute to improving the health of children, and encourage capacity building and empowerment of the families within their community”

Many aspects of this this have been achieved with the Family Nurse Partnership program implemented and running since this time. A focus on children with chronic health conditions has also continued with an on intensive outreach support for children that includes children aged 0-15 with chronic health conditions. While several programs have emerged since this document was first drafted, the integration of these services to sustain development of healthy children, and provide intensive support from children is still an area for progress and current discussion.

The focus is also reflected in the Cabinet Document, ***‘Rebuilding Family Life in Alice Springs and Central Australia: the social and community dimensions of change for our people’*** reflects this focus and provides a clear picture for future strategic direction. One of the major recommendations was that the current social concerns be used as an opportunity to **‘renew efforts** to implement the types of evidence based-policy proposals that are going to further improve the social situation in Alice Springs in the short, medium and long term’. Some key points made in the section on *“Early Childhood programs, educational attainment, employment and health”* were:

“A key role of the primary health care system is to support children from disadvantaged backgrounds to be able to enrol in pre-school and school to support the optimal level of brain development”.

“Much greater focus needs to be given to the early childhood education that young children receive at home prior to age 3”.

“Children who grow up in a disadvantaged early childhood environment do not develop the brain capacity to do well in education and, even though they attend

primary school, will, on average, do badly and drop out as soon as they are old enough to vote with their feet”.

“The things that make the difference include daily one on one interactions and talking with young children, daily reading, going to bed at regular times, being physically active and having a good playgroup of children of similar age”.

Key recommendations included:

- ‘That the Olds “Nurse-Family Partnership” Program of home-visitation for new mothers be rolled out across all communities in Central Australia as an early intervention strategy to improve the health and social functioning of low-income mothers and their babies’.
- ‘That high-quality child-care centres be established for all children aged 1 to 3 from disadvantaged households in Alice Springs and surrounding communities’.
- ‘That these centres implement the Carolina Abecedarian early-intervention approach to build school readiness and maximise potential for positive educational and social outcomes in young adulthood’.
- ‘That these children transition into 2 years of pre-school’

Achieving these recommendations will support the first goal outlined in the ‘*Cabinet Dreaming*’ which is to be the leading primary health care provider for Aboriginal People.

In supporting this process, leading Paediatric Consultant, Professor Victor Nossar has been involved in assisting Congress develop its position to child focussed programs. Professor Victor Nossar has more than 20 years’ experience in implementing community based services to enhance the development of children and young people both in Australia and overseas. He is currently the Program Leader in Child and Youth health in the NT Department of Health and Families and has been involved in supporting Congress develop its child and family focus. His involvement has included presenting to the Board in 2011, and also facilitating a forum that was held in early 2011 that considered approaches to integration of child and family services within Congress. Several outcomes from this process have followed and this has involved:

- **A steering group was identified in 2011 in response the round table forum that Victor Nossar facilitated** that consisted of, Claire Thompson, Margaret Harrison, Caroline Lovell, and Patrick Cooper. Some areas of discussion involved:
 - **Consideration of how ‘synergies’ could be developed and promoted between programs**
 - **Various approaches to developmental assessment and family assessment and how these could be utilised consistently across programs**

- **The function of child health checks as being of benefit to all children engaged is child services**
- **The current Child Care Centre being used as a potential hub for integration of child focused services**
- **The possible creation of a child services branch and a framework that could enable this branch to add value to other family support programs**
- **A regular meeting of team leaders and program managers was also established in response the round table forum** and chaired by Caroline Lovell, which continues and involves monthly meetings of team leaders and key staff who work with children. This has been an ongoing forum for discussion about child focussed issues and integration of services has been a consistent theme.

Additional developments have included discussions with Joseph Sparling following on from the 2010 SNAICC conference about Abecedarian Educational Day Care and benefits for Aboriginal Children in Alice Springs. Aspects of The Abecedarian model have been incorporated within existing child programs and Congress has been in contact with Joe through preliminary discussions about the development of this focus within Alice Springs.

Developments have also taken place to enable the existing Childcare support greater integration between programs. This will support intensive interventions for developmentally vulnerable children. This was identified through discussions that have taken place involving the steering group for the need to 'map of synergies' between programs to improve services for children with major developmental concerns).

To progress the identified need to further develop our child focussed services, the document '*Integrated Model for Child Services and Submission for Centre Based Approach*' has been prepared. This document captures the discussion to date and provides this in a written format to facilitate focussed feedback. This will *reflect* the direction identified through Cabinet, *integrate* information developed through several formal internal process, and *capture* a large volume of corporate knowledge that has developed through the implementation of several child focussed programs. This document has a heavy focus on services and programs that focus on child development in the first five years of life. While many programs benefit children beyond five, a major focus in the first instance is developing a clear logic that supports the strategic investment for children in early childhood. Guiding principles may relate and inform future discussion for strategies across a broader age range however the principal focus is the early years.

This is an important step in continuing the development of both an integrated model and a structure that will support Congress to sustain its reputation in this area, and thus providing the community with an evidenced based service that is responsive to the community's needs.

An internal review process will enable branch managers and identified staff the opportunity to provide input. An external review process will also be conducted, which will allow for leaders in the field of child health and development to provide formal feedback on this document.

While the finalised document will be an important guide for current and future programs, the process of integrating and improving services is an ongoing one. Some improvements are straight forward and can be implemented in the short term, while other aspects are more complex and planning may therefore require a longer term strategy and broader review. This is reflected in the proposal, which includes both improvements that can be made in the short term, and major areas that will involve a longer term approach and the need for obtaining relevant funding. An implementation strategy that outlines a timeline for both short term and long term outcomes is a key priority for Congress and something this proposal will be able to support.

Overview

Children are at their greatest developmental vulnerability at a time when they have the least capacity to influence their trajectory in life. Adverse experiences in early life erode the ability to make good decisions as adults and the mechanisms for how this happens are now clearly supported by science. Disorders of emotional dysfunction and impulsivity have clear neurological origins in early childhood. By the time many children reach an age when they are legally able to make decisions for themselves, their capacity to do this is inhibited due to early experiences of a lack of appropriate stimulation, and the consequent failure to develop the capacity for emotional regulation. Findings on the full extent to which early childhood experiences shape individuals into adulthood are startling and the failure of many children to reach their developmental potential has dire consequences for individuals, communities, and society as a whole that the effects have been found to extend well beyond early childhood. Education, for instance, represents a major pathway to individual and community development. The capacity to benefit from and engage in educational systems however, is limited for children who have not developed cognitive capacity to sustain attention and engage in the successive challenges involved in the development of literacy and numeracy.

This paper outlines the compelling need for investment into supporting development in the early years of childhood, based on research on the vulnerability of the developing brain, evidence of long term positive outcomes and financial benefits to the community. Further to this is the ethically imperative nature of this support. When the supports are not in place to enable children to experience healthy growth, we are forced to consider not only the lives that these children might have lived, but also their lost contributions to the community.

This paper addresses two important issues. Firstly, what supports are needed to ensure vulnerable children experience a 'normal' developmental passage in the crucial early years of life, and, secondly, what framework design can support a coordinated approach in order to maximise service effectiveness?

Introduction

Central Australian Aboriginal Congress (Congress) has a focus on improving developmental outcomes for Aboriginal children. Central to this goal is the position that the best way to close the gap is to make sure it is not created in the first place. Early childhood is an area of great strategic investment. This is because by the time that observable delays are exhibited, exponentially more resources are needed to undo this negative decline, while at the same time the scope for recovery is diminished.

There are many contributing factors to developmental concerns. One major influence is adverse childhood experiences leading to several developmental problems. These problems, often unnoticed in early childhood, have consequences in later life and are observed in low educational attainment, poor health outcomes, substance misuse, significant mental health problems and higher incarceration rates (26). Unfortunately these are all problems well known within the Alice Springs community.

A key to overcoming delays to the developmental trajectory and associated long term effects is the coordinated implementation of preventative and early intervention programs. This focus has seen CAAC invest in several child-focussed programs, including:

- **Australian Nursing Family Partnership Program (ANFPP)**, which has implemented the David Olds model of Nurse home visitation to support early child development. This program is offered to women from early pregnancy to the time her child is two years of age.
- **Preschool Readiness Program (PRP)**, which conducts health checks and developmental screening on all three and four year old Aboriginal children in Alice Springs to support transition to preschool.
- **Healthy Kids Clinic (HKC)** which has a major focus on completing comprehensive child health checks on all children aged zero to five and maintaining immunisation schedules.
- **Family support services including Targeted Family Support Services (TFSS) and Intensive Family Support (IFS)**, which works with vulnerable and at risk children and their families.
- **Child Health Outreach Program (CHOP)**, which provides intensive support for children zero to 12 years with chronic health conditions and social barriers to accessing support services.
- **Child Care Centre** which provides full day child care to some 55 Aboriginal children aged six months to five years.

While these programs have been individually successful, collectively they have provided the details of a concerning developmental trajectory well underway by age three for many children. Data presented in this paper will show this gap widens for disadvantaged children with many showing major developmental concerns before school entry age.

Although experiences across the entire childhood period are significant and have influence on later adult life, the focus of this document is on the importance of investment in the first five years. This period marks a time of great physical vulnerability of the developing brain. Programs that incorporate an understanding of this vulnerability and can sustain positive development are paramount to this coordinated approach.

Being developmentally and physically well at age five will increase the scope for children to benefit from school experiences, sustain relationships and family connections, and provides the foundation for continued positive development throughout primary and secondary years of schooling. While approaches from five to twelve, and also twelve through to eighteen are important considerations in an integrated child services model, they are not the specific focus of this document.

Part one of this document outlines the background for Congress' focus on early childhood and the benefits of investment in this area. This section reviews developments in literature concerning the vulnerability of the developing brain. Preventative programs and early intervention models are reviewed with a focus on developmental delay and emotional regulation. Implications for service delivery and cost benefits of investment in the early years are also reviewed. The main aim of this section is to integrate the current literature to outline a "whole of program logic" that applies to all child programs and gives meaning to these as a collective.

Part two provides an overview of a coordinated model of early childhood services. This section aims to provide a framework that will support Congress improve services delivery now and into the future. This approach highlights the scope for Congress, as a comprehensive health service, to provide the focal point for population-based integrated childhood services. This model identifies purposeful partnerships, action research and transformative population change based on strategically identified programs and an overarching evaluative framework.

Part two also builds on Congress' significant working knowledge for service delivery in this area and much of the detail in this section is based on what is currently operational in several child programs. Congress possesses a detailed understanding of the barriers and pathways to effective service provision, as shown through a successful track record of providing effective services in the past. Learning from this experience forms an important part of the integrated model proposed. Documenting this in a framework is crucial for establishing and developing the corporate knowledge that Congress has in the areas of early

childhood. This capitalises on formal processes and ongoing discussion that have taken place in recent years.

A major successful outcome of the framework will be greater efficiencies created through the sharing and developing of this model. The documentation of this framework is also important in identifying areas where services can be improved within existing resources. Increasing this efficiency is key to maximising the current services that exist and also developing a sound base for new programs. Details for this are discussed.

Part three highlights the need for a Centre Based approach to early intervention. This centre will incorporate much of what is known about what can be done for children most at risk and is a logical progression from existing services to the support needs that have been identified through the provision of these services. In particular this will enable support to be provided with the necessary intensity and duration for long term gains to be sustained. The centre will comprise both preventative and early intervention supports. Children at risk will experience the educationally enriched care needed to overcome what could otherwise be a negative decline. Intensive clinical interventions will be provided for young children and their parents with these challenges.

Through partnerships outlined in Part Two of this paper, this centre will be based on both a detailed understanding of what Congress has been able to learn about the needs of developmentally vulnerable children in Alice Springs, alongside empirical literature that will support a rigorous evidence based approach to implementation and evaluation.

Part 1 – Background

Introduction

It is well established that social and environmental influences in early childhood shape outcomes across life (10,31). Children who are exposed to environments of poverty, substance abuse, overcrowding and other negative risk factors tend to experience similar environments in adult life, raise their own children in these conditions and therefore continue an intergenerational cycle of poverty (30). We know many disadvantaged children are unfortunately exposed to high levels of domestic violence, overcrowding and other risk factors commonly associated with low socio economic status (SES). The experience of these problems is disproportionately high for children living in Central Australia. International research has plotted the outcomes of these experiences into adulthood. Specifically, adverse childhood experiences have been related to increased levels of depression, suicide attempts, sexually transmitted diseases, smoking, and alcoholism (21,29,10,31). Further, many adult health and social problems have their origins in early childhood and result from exposure to multiple adverse experiences (Bennett, 2003, cited in 10). Amelioration of this negative trajectory requires a clear understanding of how adverse events influence development in early childhood and later life, and also implications for targeted approaches that can be most effective.

Investment in the early years

There is a clear link between negative childhood experiences and dysfunction in adulthood, and there is now wide support for the importance of investing in the early years. This has been driven by scientific discoveries on brain development, the effectiveness of preventative and early intervention, and economic research into long term cost-benefit analysis of early intervention. Collectively, these arguments highlight how investment into the early years benefits not only the individual but also the whole community.

Increased attention in this area has led to the implementation of several programs, with national screening processes now undertaken to more closely monitor the early development of children in Australia. International research, along with an improved regional knowledge into the developmental concerns for at risk children offers great potential for designing targeted interventions to support development. Details of these findings and their implications for service design are outlined below.

Research on brain development

Development is not predetermined at birth, or simply genetically programmed.

Irrespective of the condition of the brain at birth, be it neurologically damaged, affected by substance use of the parent during pregnancy, or fully healthy with every part of the brain developed to its optimal level, the environment has a significant effect on all subsequent

growth. Research has long established the role of the environment in cognitive development and recent advances highlight the full extent to which environment shapes the physical growth of the brain in the early years. In the first three years, neurons multiply rapidly, making thousands of new *branches (synapses)*, which are interconnected with thousands of other neurons. This wiring forms the basis of the child's present and future skills – how well they think, speak, reason, feel, move their muscles, play with others and generally make sense of the world (51). What is becoming clear is that the first few years of life is a crucial period, with interactions between genetic make-up, environment and early experience having a dramatic impact on how the brain forms. For instance, more has been learnt about how experiences can enhance or inhibit neural connectivity at key developmental stages. Experiences are important as they enable the developing brain to establish and refine neural organisation in ways that allow adaptation to the complex contingences of diverse environments. (49, p. 348, 48, 49, 50). Several neural systems crucial for adult functioning are dependent on experiences during the period of infancy and toddlerhood.

The first year of life signifies the most rapid growth for auditory and visual perception and mastery of motor skills, while language development is at its peak from late infancy through the preschool years (Berk, 2009). For some abilities there are critical periods when the brain is open to stimulation that changes it, and if this opportunity is missed, the skill can never be learned. (51). an example of a critical period is the phonetic sounds of a language. By 6 months babies have developed an auditory map of all the sounds in the language that is spoken to them. By 12 months they will have lost the ability to hear differences in sounds that have not been spoken to them, which has significant implications for their ability to comprehend and produce spoken language. Speaking to babies is therefore critically important. (51).

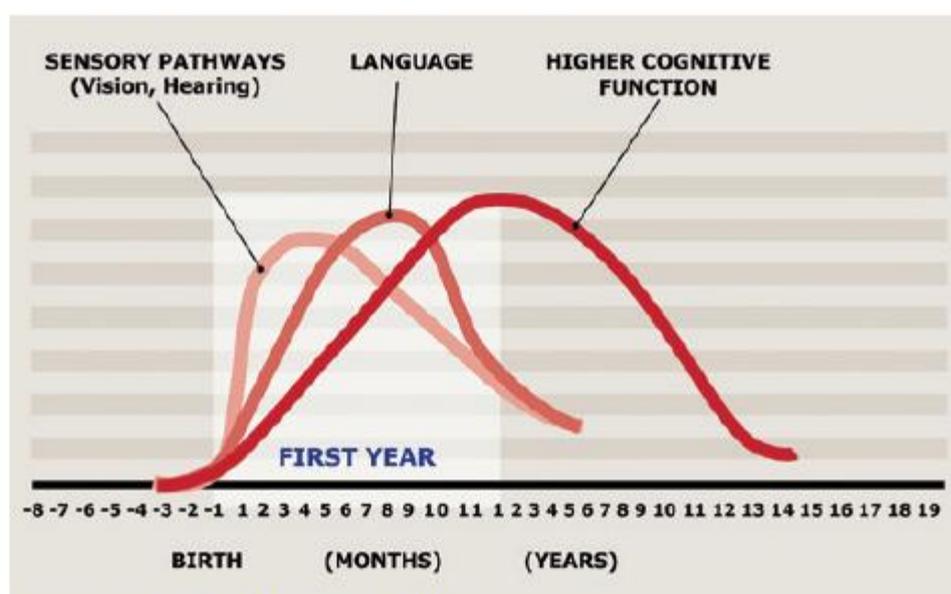


Figure 2: Sensitive periods for synapse formation (Shonkoff, J, Phillips, D eds 2000)

Research has highlighted how enrichment and deprivation are two mechanisms that affect the input necessary for growth, impacting both the structural and functional organisation of the developing brain (49).

The susceptibility to adverse events, and the responsiveness to positive experience in early childhood cannot be understated. In the early months the neurons being frequently fired are the ones that will survive. This is a normal process that supports growth, and it is crucial that the appropriate stimulation is provided to ensure that growth is healthy. If infants are not spoken, read or sung to, the brain networks that are to be used in speaking and understanding speech will not expand, thus delaying the child's rate of language development (51). For instance, infants who do not receive appropriate stimulation are less likely to have optimal brain growth, reach their full potential, have good social networks, do well at school and generally be satisfied with life (51). Brains do not develop normally in the absence of critical genetic signalling and essential environmental input (49).

While some stimulation is better than none at all, we know that many children receive stimulation that is damaging and has long term negative effects for their development. Infants living in constant fear or stress are not free to fully explore their world, which means that the growth in neuronal networks that control mental, physical and social skills will be constrained. In addition, the emotional areas of their brains and their stress reaction systems become primed and 'set' in ways that can make them reactive, anxious and fearful for the rest of their lives (51). Unfortunately, the social and emotional aspects of early development are often not fully appreciated and it is clear that unless a child has the experience of emotional security, cognitive skills are unlikely to develop well. When infants are comfortable, learning takes place more readily (51). While this may also be true for adults, it is learning during infancy that shapes the physical growth of the brain, which then supports all future learning.

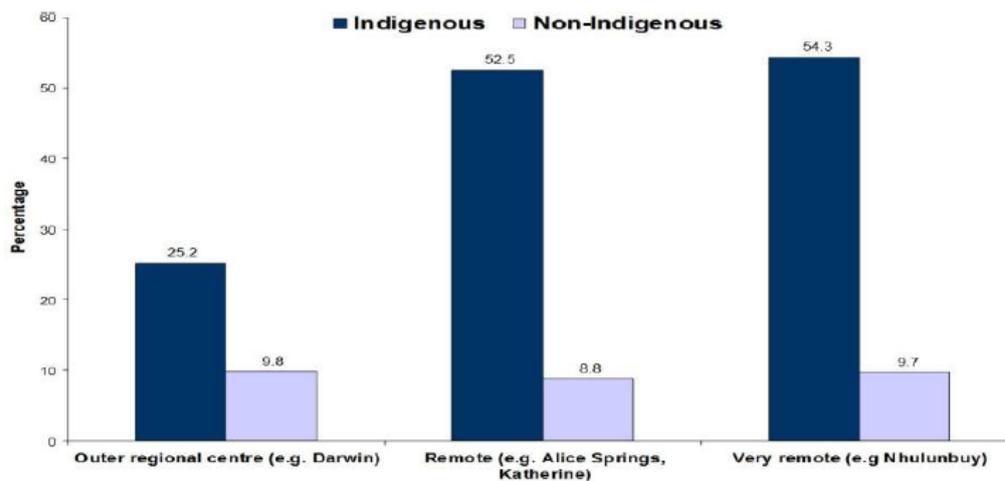
These findings on the vulnerability of the developing brain help explain two major problems that originate in early childhood and have lifelong consequences: developmental delays and regulation difficulties.

Developmental delay

National assessment data shows that Aboriginal children are disproportionately developmentally vulnerable in relation to their non-Indigenous counterparts. Some of the best available information on this comes from Australian Early Development Index (AEDI) data. The AEDI is a measure of children's health and development at the time they start school (i.e., at five years of age) and contains five domains: physical health and wellbeing; social competence; emotional maturity; language and cognitive skills; and communication skills and general knowledge. If a child scores in the lowest 10% of scores nationally, they

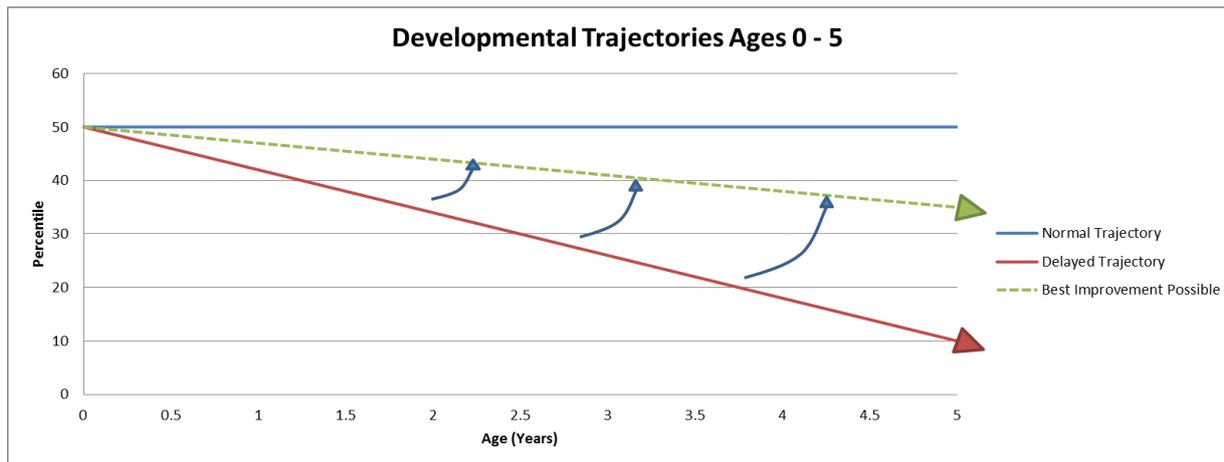
are considered to be 'developmentally vulnerable' (25). The 2009 AEDI results (25) showed that 54.3% of Indigenous children living in very remote areas (e.g., *) were developmentally vulnerable on two or more domains compared to 9.7% of non-Indigenous children. These figures were very similar for remote areas (e.g., Alice Springs) with 52.5% of Indigenous children developmentally vulnerable on two or more domains compared to 8.8% of non-Indigenous children.

Figure 6: Percentage of children developmentally vulnerable on two or more domains by area of remoteness and Indigenous status: NT 2009 (ref 25)



While the AEDI data shows vulnerability at age five, a recent evaluation of clinical screening data from the CAAC Preschool Readiness Program showed that there were developmental concerns evident in many children at age three. Although many factors contribute to this, much of the observed delay may be due to lower levels of stimulation received. It is clear that the longer children go without appropriate stimulation, the bigger the gap becomes between where they could be, and where they are. The model for this negative trajectory is summarised in figure 7. This hypothesis is supported both by international studies on children with lower SES and also by what CAAC has learned from contact with those children who have developmental delays (ref).

Figure 7: Developmental trajectories across the 0-5 age range



There is evidence that high-risk children show gains in linguistic and intellectual competence when provided appropriate language and cognitive experiences within a warm and responsive social context (4). This is supported in findings from studies conducted overseas, and also through action research on a small scale conducted through the Congress Preschool Readiness Program (Moss & Silburn, 2012). Ramey et al. (2004) published a review article on early childhood interventions and concluded that “the cumulative developmental toll that is measured reliably in high risk samples of children beginning in the second year of life can be substantially reduced through a high quality preschool program”.

The Congress Preschool Readiness Program has been able to show that developmentally delayed children have rapid gains when targeted interventions are provided. The pre-school years represent a period of great vulnerability, but also a period during which children are highly responsive to interventions. The Preschool Readiness Program has been able to assess, for example, that in response to developmental stimulation, children with language delays of 2 years at age 4 are capable of improvements of up to 9 months, in terms of age-equivalence of their skills, within the space of one month. The observation that children respond quickly to stimulation suggests that it is this lack of stimulation to which an observed delay can most likely be attributed - and not simply a congenital condition. The provision of appropriate stimulation from birth may therefore prevent developmental delay in many children. It is also clear that children who are at a vulnerable developmental stage are also capable of rapid improvement in a very short space of time.

These findings have important implications for intervention. Normal development requires a high level of sustained stimulation. There are forces that are known to shape a delayed developmental trajectory, but there are a range of evidence-based approaches that exist, which may prevent developmental delay in these children.

Key points:

- Children with developmental delays are capable of dramatic improvement across the early years in response to appropriate intervention.
- While children are capable of dramatic improvement, there is a point of diminishing returns that gets wider as children grow older.
- For infants there is scope to make sure deficits do not occur (preventative programs).
- For toddlers there is scope to rapidly close a developmental gap (early intervention).
- All investment in the early years (preventative and early intervention) is high yielding in the long term.

Several evidence based models that support improved developmental outcomes for at risk children are reviewed in a later section.

Regulation Difficulties

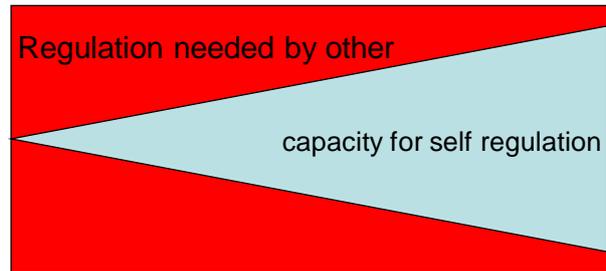
While stimulation is crucial for growth, nurturing relationships are important for emotional regulation and buffering against adverse life events, which are disproportionately experienced by those most at risk. As mentioned, cognitive development is impaired when children are not able to experience safety in their care environment. Smith et al, (2008) found that the quality of the parent-child relationship moderated the extent to which adversity shaped outcomes. Indeed, a strong protective mechanism for children raised in poor environments is the presence of a secure attachment relationship with a caregiver, characterised by high quality parent-child interactions (REF). Improving the quality of parent-child relationships therefore holds great potential for the long term wellbeing of children at risk.

The consequences of failing to develop adequate regulation skills are dramatic. Trajectories of healthy and unhealthy development are summarised in figure 8. Evidence based intervention for children with regulation difficulties is reviewed in a later section.

Figure 8: Development of regulation

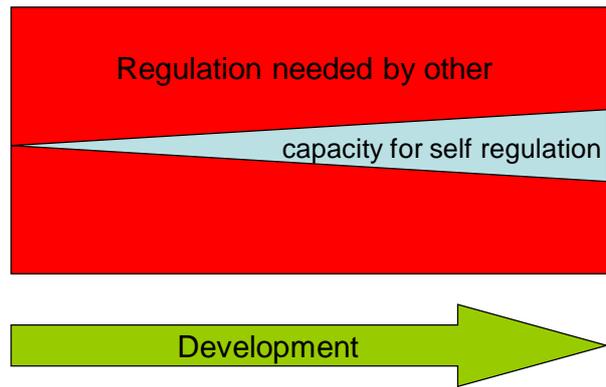
Healthy development

Child has experiences in early life that enable development of self regulation. Child becomes less dependant on external figure (ie parent) to regulate emotions and is able to manage challenges without emotional breakdown or physical outburst.



Unhealthy development

Child does not have experiences in early life that enable development of self regulation in adult life. Child never develops functioning required to manage emotions and impulses – individuals who do not have regulation display problems in later life such as alcohol dependency, mental health difficulties and impulse control problems that require regulation and control by external agency such as police, prison, and mental health services.



Evidence supporting investment in the early years

Given the scope for early investment to lead to long term gains, several approaches have been undertaken and evaluated (4,12,17,19,44). These include **Preventative Programs** that target vulnerable children and families at high risk of developmental failure, and **Early Intervention programs** that provide support early in a child's life where problems have been identified.

Examples of preventative programs include the Nurse Family Partnership (NFP) Program, Home Visitation, and the Abecedarian model of Educational Day care. These programs work with parents and children *before* developmental problems arise. Approaches support children to access the stimulation, quality relationship and access to services needed for healthy development. While the NFP uses an outreach based model with emphasis on home visits and contact with mothers, the Abecedarian Educational day care has a focus on daily contact with the child at a centre where children experience enriched care. These models are also sometimes referred to as 'preventative intervention', however will be referred to in this document as 'Preventative Programs' or 'Primary Prevention' to avoid confusion with 'early intervention' programs which provide support *after* a difficulty has been identified for treatment.

Early Intervention programs have a focus on providing remedial support. These can involve intensive interventions for children with identified developmental delays, behavioural problems, or major emotional regulation difficulties. Providing intervention at the earliest possible point is crucial as difficulties unresolved can have a negative impact on several aspects of development. These are also referred to as ‘Secondary Prevention’

Programs can also take a **child focussed** or **parent focussed** approach. In parent focussed approaches there is emphasis on support for the parent to develop skills and knowledge to support children in order to improve outcomes for them. Child focussed interventions are directly targeted at the child.

These modalities of influence and program examples are highlighted in the table below. This framework identifies the need for a range of approaches and is supported in the Cabinet Document, *‘Rebuilding Family Life in Alice Springs and Central Australia: the social and community dimensions of change for our people.’*

“All the programs we propose, or are already putting into action in a limited way, are strongly evidence-based. They describe programs and activities with a strong preventative approach: building family life to avoid the potential damage so many currently experience. Others look to secondary responses to existing problems: reducing or eliminating existing damage. They look to the best learnings we can find internationally; they are refined through local experience and adaptation”

PROGRAM MODELS:

Primary vs Secondary / Centre based vs Home visitation / Child Focussed vs Carer focussed

	<p>Primary Prevention Targets children with no current problems but are at risk of developing problems – identified risk usually based on low SES or maternal education level.</p>		<p>Secondary Prevention Targets children with current problems identified early in life when most likely to respond to intervention and before gets worse – determined by screening OR referral to services.</p>	
<p>Centre Based Most of work is done at a centre where child and or families come in to access service.</p>	<p>Child focussed Abecedarian Immunisations Child Health Check Developmental screening</p>	<p>Carer focus Health advice to Parents in clinic (eg nutrition, brushing teeth, toilet training)</p>	<p>Child focussed Child centred play therapy Therapeutic day care Preschool Readiness Program Antibiotics</p>	<p>Carer focus Filial Therapy Circle of security Parenting advice/programs Parent support groups</p>
<p>Home Visitation Most of work is done in the homes of families where staff outreach to children and families.</p>	<p>Child focussed Mobile Play Groups</p>	<p>Carer focus Nurse Home Visitation Families as First Teachers (home visiting Learning activities)</p>	<p>Child focussed Child Health Outreach Program Ear Mopping</p>	<p>Carer focus Targeted Family Support Intensive Family Support Case management models for children at Risk Parents Under Pressure (PUPS)</p>

Nurse-Family Partnership (NFP)

A notable example of a preventative program, directed at improving maternal and infant outcomes, including the reduction of abuse and neglect in a high risk, impoverished sample is the work of Olds, Salder, and Kitzman (2007). These authors pioneered the Nurse-Family Partnership (NFP), a nurse-home visitation intervention for impoverished first time mothers. The preventative intervention begins prior to the 28th week of pregnancy and continues through to the child's second birthday. Though the NFP program uses attachment theory, self-efficacy theory, and human ecology theory to ground the work, the program evolved out of a public health rather than mental health delivery approach.

NFP has three major goals: to improve pregnancy health outcomes, to improve infant health and development outcomes, and to improve maternal life course development. Trained nurses use manualised guidelines to address issues related to personal health and child health, quality of caregiving for the infant, maternal life course development and social support. Special attention is given to the importance of establishing a trusting, consistent relationship between the nurse and the client, and the development of a safe, nurturing, and enriched parent-infant relationship.

Through a series of randomised controlled trials, NFP has demonstrated significant impact across a variety of maternal and infant health and social outcomes, including reductions in incidents of child maltreatment, reductions in serious accidental injuries to children, delays in subsequent pregnancies, and increased maternal employment, as well as reductions in child and maternal criminal and anti-social behaviours as long as 15 years after program completion (Olds et al 2007). Importantly, two independent groups have shown that the program has yielded significant cost benefit (Aos, Lieb, Mayfield, Miller, & Pennucci, 2004; L Karoly, Kilburn, & Cannon, 2005)."

While this approach represents a highly effective way to prevent delays occurring, the required contact with the service before the 28th week of pregnancy means many at risk and vulnerable mothers are not eligible for this program. Furthermore, children complete the program when they are still at a highly vulnerable age. Studies have shown that outcomes are best when linked to other services such as transition to school programs (49).

Abecedarian (educational day care)

The Abecedarian model of educational day care provides a centre-based, preventative intervention for children who are known to be at high risk of developmental delay. Abecedarian (pronounced Ab-a-sa-dare-ee-an) comes from Latin and means 'one who learns the basics, such as the alphabet' (4). In several respects, this model parallels traditional childcare. Specifically, children receive access to quality care during normal working hours, which normally involves contact from Monday to Friday, between 8am to 6pm.

The Abecedarian model has been rigorously evaluated, with longitudinal studies following children into adulthood in order to determine long term effects of the intervention. Positive findings have been replicated in several jurisdictions. The original Abecedarian study was conducted in the early 1970s in North Carolina. Participants were from impoverished families and were all healthy, full-term infants (4, 19). The aim was to determine whether the provision of systematic, high quality education could prevent or reduce the negative developmental trajectory experienced by these high-risk children (4). The intervention design involved a randomised, controlled trial and because the aim was to test the specific value of an early educational program, both treatment and controls were provided with adequate nutrition, social services, and medical care (4).

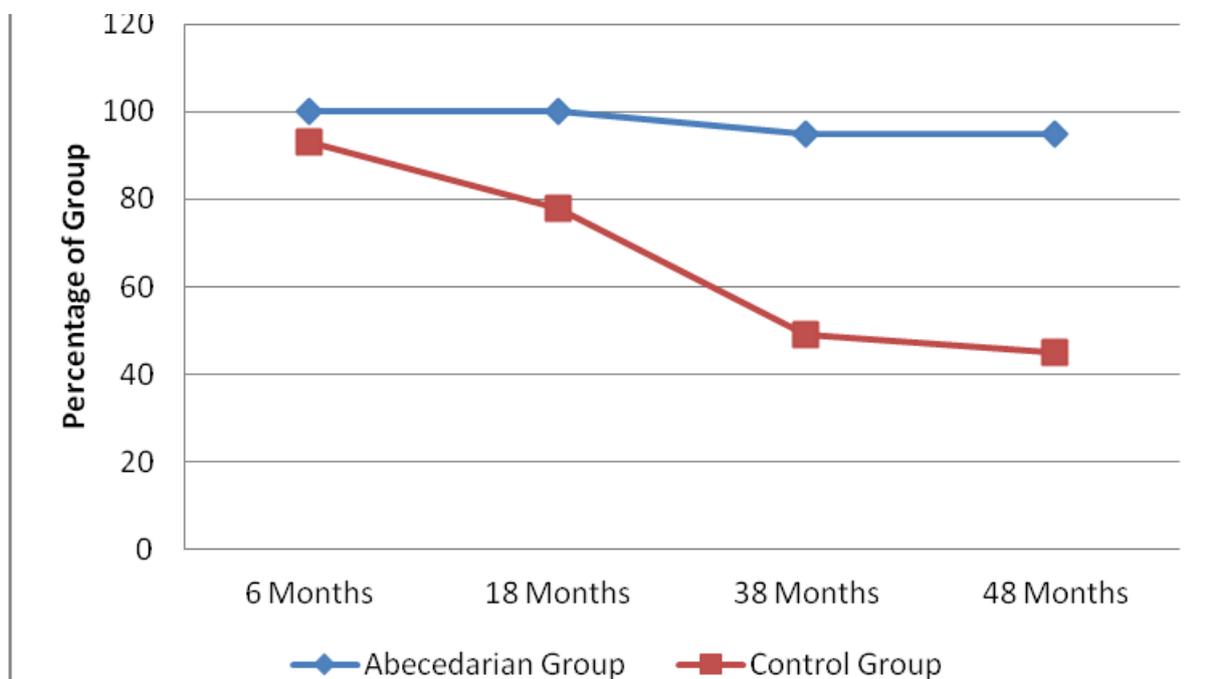


Figure 10: Abecedarian follow up: percentage of children in a normal IQ range (>84) at different ages

The initial Abecedarian project saw children in the treatment group follow a more ‘normal’ developmental trajectory in terms of IQ measurements compared to controls (Figure 10).

The results in Figure 10 show a decline in IQ for those that did not receive the intervention compared to those who did. (Martin, Ramey & Ramey, 1990). A further important finding was that the original Abecedarian approach has demonstrated gains that have been shown to persist well into adulthood.

Major features of the Abecedarian approach involve learning games, conversational reading and enriched care). While Abecedarian and traditional childcare models are structurally and operationally similar, they are functionally distinct. To provide the context of Abecedarian and its scope as an intervention model for developmentally vulnerable children, this distinction is outlined below.

Child care as an institution, both historically and literally, provides 'care' for children of working families. Children who attend child care will do so to access a safe and caring environment that supports normal growth, and makes time available for parents and carers to engage in other activities. The main problem child care solves is 'who will look after children while the primary carer cannot?'. While debate exists among professionals working with children and researchers in child development as to the extent to which this separation from the primary carers is positive or negative for the developing child at early stages of development (ref), a significant body of research has investigated the potential for high quality childcare to offer a safe developmental pathway for developmentally vulnerable children. This is because developmentally vulnerable children often do not receive, from their home environments, the nurturing relationships and stimulation required to support healthy cognitive and emotional development.

The Abecedarian model has been developed specifically for, and evaluated against, long term effects for developmentally vulnerable children. Childcare centres may be utilised by welfare services to support families, although the focus of this is often respite for the family and care for the child, rather than the opportunity to facilitate a targeted intervention that is aimed at long term healthy cognitive growth. The Abecedarian model could be utilised in service provision in a number of ways, including the following:

As a 'curriculum' introduced to an existing child care centre, the Abecedarian approach represents a replicable framework that is known to be effective in improving developmental outcomes for developmentally at risk children. This would be expected to do no harm to the children who are of low to no risk, and is likely to have major benefits to those who are at risk. This approach may be used to improve services in existing centres who work with a high portion of children at risk of developmental delay (i.e., children come from homes where there are several factors of risk to healthy child development, or where child care centres house a large number of children in out of home care due to child protection intervention).

As a centre that specifically targets children who are developmentally at risk, the Abecedarian model has been specifically developed, applied, and evaluated as an effective way to ensure children at risk receive the stimulation required for healthy development. When used in this way, the Abecedarian approach provides a preventative service for developmentally vulnerable children who would not otherwise access any form of childcare. Children who fit in this category will be from multi-risk families and have parents who are dependent on welfare services. This approach is important for mobilising children from

environments of poor stimulation into environments of enriched stimulation. Differences between Abecedarian and traditional forms of child care are summarised in Table **

Table **. *Functions of and differences between traditional day care and the Abecedarian model of child care*

	Traditional day care	Abecedarian
Reason for referral	Need for a safe place for child to be cared for during working hours	Child's developmental needs unlikely to be met without intervention.
Primary function	Provide care to children during the working day.	Prevent developmental delay in children who are known to be at high risk. Maximise opportunity for success in life by ensuring necessary stimulation is provided while the brain is developing.
Secondary function	Provide opportunity for sustained development and socialisation of healthy children. Support parents to sustain employment and seek employment / training (as a result of child care subsidies for single, studying, part time employed parents)	Respite support to help at risk parents engage in the work force. Provide support to parents through home visitation.
Parents typically	Are working parents OR working guardians Have a high school education or higher	May be working parents but may also be unemployed or in low skill jobs Have a high school education or lower
Children typically	Represent a range of children from working families (this may differ depending on the socio-economic context the centre operates within).	Are all identified as at high risk of developmental delay – (and therefore most receptive to preventative intervention).

The Abecedarian model has been replicated in several case models. Findings are provided below from studies that have conducted follow up investigations with participants from the first Abecedarian interventions at various time points up until age 30. Studies that followed up participants at four to seven years and at 10 years post intervention found positive effects for intellectual development and academic achievement, as well as lower likelihood of placement in special education or repetition of a grade during schooling, (16, 32). Studies that followed up participants at 21 years of age found that those who received the preschool Abecedarian intervention began smoking cigarettes and marijuana at a later age and smoked marijuana significantly less than the preschool controls (39, 42). Those from the intervention group also showed significantly higher intellectual and academic achievement scores, more years of education and lower rates of teenage pregnancy than control group participants (40, 42). It is important to emphasise that this difference can be attributed to the intervention received in early childhood, as the treatment group received no additional intervention after the early intervention had been concluded.

A further follow-up study conducted when the original participants were 30 years of age showed that those from the preschool intervention group had attained significantly more years of education, however, income-to-needs ratios and levels of criminal involvement were not significantly different between intervention and control groups (8). The youth crime study (19) also found no differences between the groups in criminal involvement between 16 and 21 years of age. Results did also show, however, that mothers of children from the intervention group made gains in their own education and employment status compared to mothers from the control group (32). This is an important and unexpected finding and has major implications for a population approach to transformational change; with benefits beyond those experienced directly by the child.

Of major significance is that repeated application of early educational interventions using a structure similar to the original Abecedarian project has consistently produced equivalent results. This includes Project CARE (17), the Infant Health and Development Program (44), Brookline Early Educational Project (14) and the Chicago Longitudinal Study (12). These are summarised with outcomes provided below.

Project CARE followed a very similar format to the Abecedarian intervention. It was a full-time, centre-based intervention for children from infancy to kindergarten entry and it used a Learning games based curriculum (17). While the centre was similar, the evaluation design differed slightly, with a three-way randomisation design used. The design involved a control group, a family intervention only group, and a family intervention plus centre-based intervention. The group with the centre-based intervention showed significant differences in intellectual test performance relative to controls, while no significant differences were shown between the family intervention only group and the control group.

The **Infant Health and Development Program** was a randomised controlled trial aimed at enhancing cognitive, behavioural and health status for premature infants. The intervention targeted the first three years of life with paediatrician support, home visits, parent support groups and an educational program in special child development centres (44). Home visits included curriculum programs containing developmentally appropriate learning activities. Child development centres were attended from 12 months of age, and transport was provided for those who needed it (80-100% of children across sites). Curriculum targeted four main areas designed to increase adult-child interaction – cognitive, social, motor and linguistic (44). When assessed post-intervention children in the intervention group were found to have significantly higher IQ levels and fewer parent reported behaviour problems than those in the control group (44).

The **Brookline Early Educational Project (BEEP)** was an experimental program in which children participated from birth until kindergarten entry. It offered health, educational and social services to parents and children. This included home visits, parent groups, toy and book libraries, playgroups, prekindergarten programs and health and development monitoring. Access to regular health care services was also facilitated. Children participated in a weekly play group until age two and then daily preschool program from ages three to five. The preschool program focused on development of planning and organising skills. (14). Evaluations at kindergarten entry and second grade demonstrated dose related positive effects for social development, and learning skills and strategies. BEEP children also showed lower levels of social or learning difficulties relative to comparison children who did not receive this intervention. (14). A follow-up at 21 years of age demonstrated that BEEP participants had higher levels of income and education as well as more positive well-being and were better caretakers of their own health than those in the control group.

The **Chicago Child-Parent Centre Preschool Program** was a preschool and kindergarten (three to four year old children) intervention for low-income, high-poverty children in Chicago. Nutritional and health needs were met as part of the program. Preschool intervention consisted of a half-day program and five year olds participated in a full-day kindergarten program, following the normal school year. Parents were required to be involved for a minimum of half a day per week. Longitudinal follow-up studies at age 22 have shown that the preschool intervention group had obtained higher education levels and college attendance relative to controls.

Randomized Controlled Trials	Location	Duration of Program	Type of Program	Oldest Age of follow-up
Abecedarian Study 1 (The Abecedarian Project)	Chapel Hill, NC	Birth to 5 years	Center + social work home visits	30 years
Abecedarian Study 2 (CARE)	Chapel Hill, NC	Birth to 5 years	Center + educational home visits	20 years
Infant Health and Development Program				
Abecedarian Study 3	Boston, MA	Birth to 3 years	Center + educational home visits	18 years
Abecedarian Study 4	New Haven, CT	Birth to 3 years	Center + educational home visits	18 years
Abecedarian Study 5	Bronx, NY	Birth to 3 years	Center + educational home visits	18 years
Abecedarian Study 6	Philadelphia, PA	Birth to 3 years	Center + educational home visits	18 years
Abecedarian Study 7	Miami, FL	Birth to 3 years	Center + educational home visits	18 years
Abecedarian Study 8	Little Rock, AK	Birth to 3 years	Center + educational home visits	18 years
Abecedarian Study 9	Dallas, TX	Birth to 3 years	Center + educational home visits	18 years
Abecedarian Study 10	Seattle, WA	Birth to 3 years	Center + educational home visits	18 years
Abecedarian Study 11 (Cerebral Palsy Study)	Baltimore, MD	Age 1 year to age 2 years	Parent training for home intervention	2 years
Abecedarian Study 12 (Orphanage Study 1)	Iasi, Romania	Age 1 year to age 2 years	Home (small group in orphanage)	2 years
Abecedarian Study 13 (Orphanage Study 2)	Iasi, Romania	Age 2 years to age 3 years	Home (small group in orphanage)	3 years

While the Abecedarian and Nurse Family Partnership programs illustrate that it is possible to sustain healthy development for children at risk, neither model attempt to provide remedial support for children who already have identified major developmental and emotional problems. The original Abecedarian study involved children who were at risk, but were healthy at birth. Similarly, the NFP home visiting program begins working with parents even before the child is born. This focus highlights the preventative nature of these programs and importance placed on early engagement for normal growth to be sustained. However, this model is not designed for children who are at the highest level of risk – those with *current* problems such as regulation problems and developmental delays. Evidence based early intervention models and developments in the field of infant and toddler mental health are therefore described below.

Early intervention

There is now a well-established field of research and practice in the area of infant and toddler mental health. This perspective brings together a range of evidence based interventions. Many of these are based on a theory of neurological development that accounts for the importance of experiences on the developing brain. Such interventions can effectively alter trajectories for children who have had poor quality interactions and low levels of stimulation. Child-Parent Relationship Therapy (49) is one example of an evidence based clinical intervention that can improve relationships and makes a major contribution to emotional health and development in the long term. Play based therapies can be used to enhance child development through positive relationships that support growth through play. The parental component of these interventions is focussed on skilling the parent to engage with the child positively, supporting growth and development. This model provides interventions that enable healthy exploration of the world, and development of skills that support formation of positive relationships.

Early intervention models offer the potential to support effective changes to the long term outcomes of a child's life. However, a limitation of some models proposed is the capacity for the interventions to obtain the level of intensity needed for developmental gains to be sustained. Preventative programs described above are of a high duration and intensity. Mental health interventions for adults that are based on weekly contact can be effective due to the meta cognitive skills adults possess, including the ability to recall and reflect upon what may have been discussed in a therapeutic session. In contrast, children require repeated and regular interventions to enable them to experience the relationships and stimulation required to facilitate healthy development. Within highly vulnerable populations, a regular weekly session is not likely to be sufficient to produce change to overcome deficits already experienced, nor of the duration required to support improvements to be meaningfully effective in the long term. One way to provide intervention at the level required is for clinical services to be 'wrapped' around centres that

children are attending daily. This model has been previously implemented and is described as 'therapeutic day care'.

Therapeutic day care combines elements of intensive centre based approaches (such as Abecedarian enriched care), with the addition of focussed interventions for children with major developmental concerns. Physical, psychological, developmental, and educational interventions can be provided with an intensity and duration that can shape a normal developmental trajectory. The 'Childhaven' program is an example of a therapeutic child care centre that has provided intensive care to maltreated infants and toddlers.

Child-haven – therapeutic child care

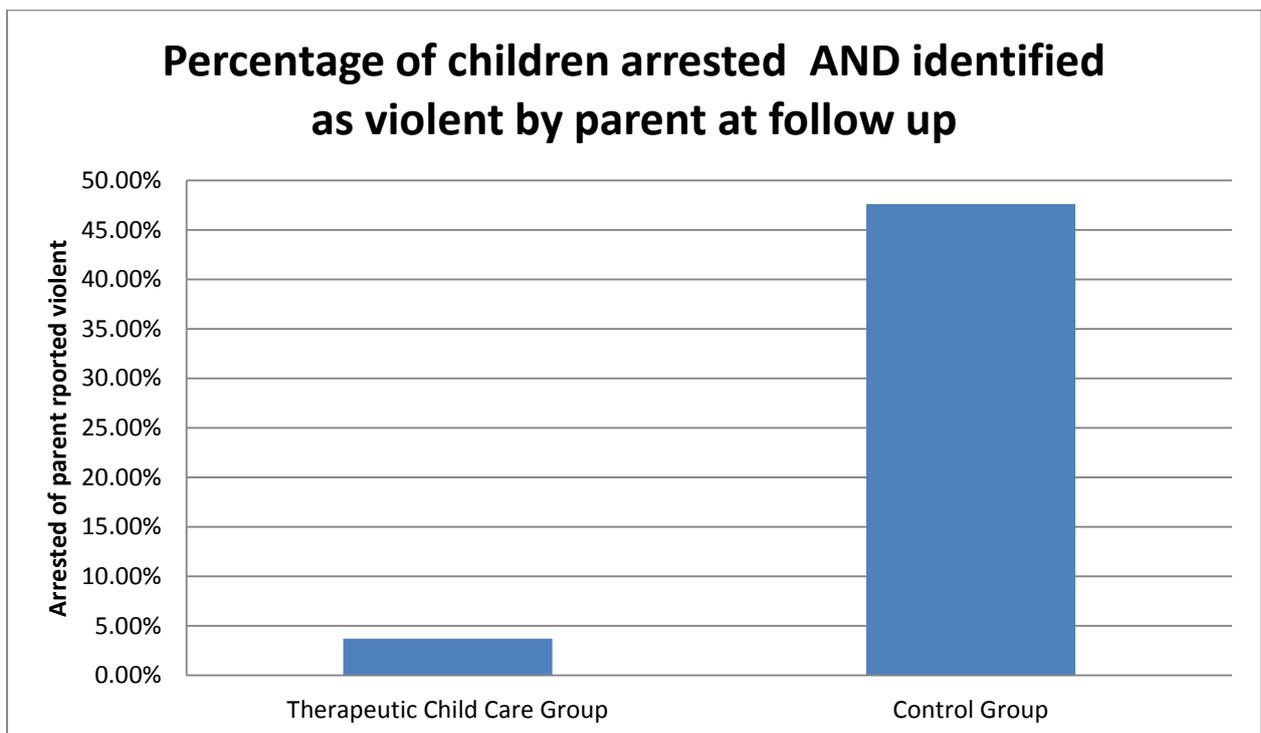
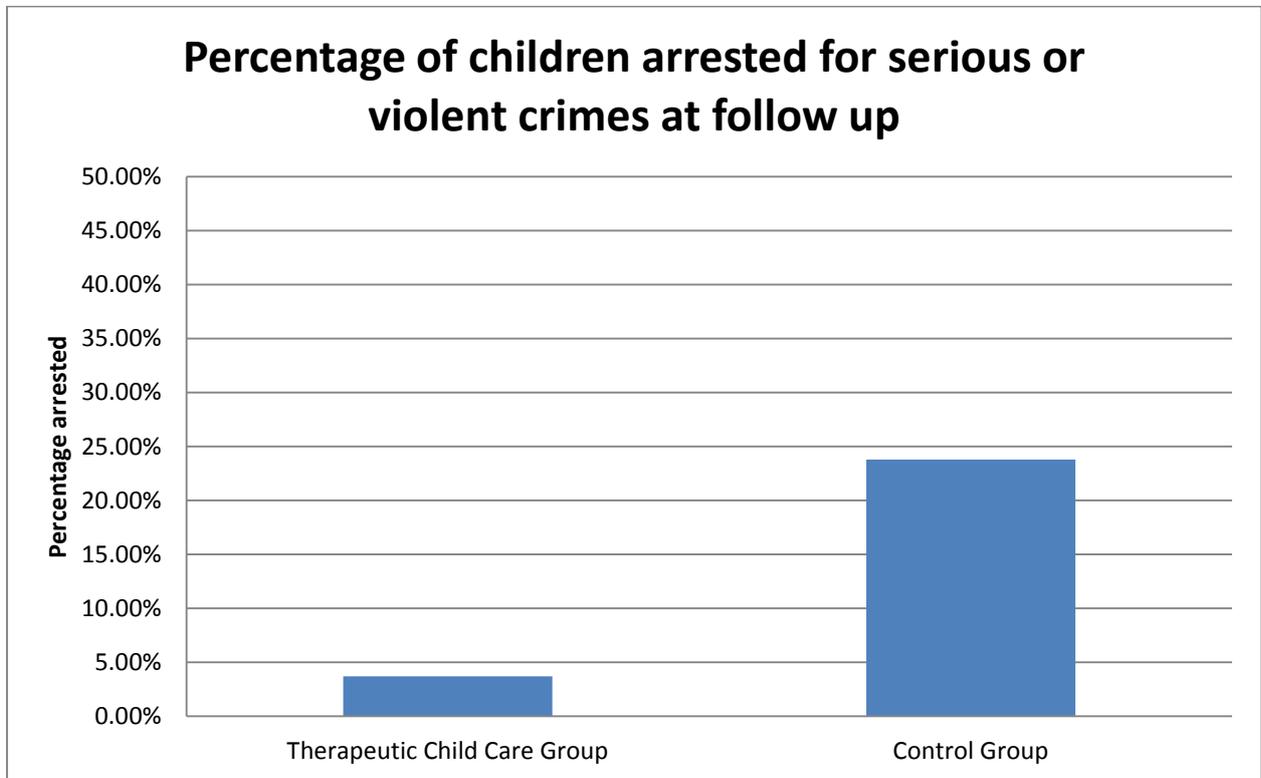
'Child-haven' is a program that focusses upon providing daily therapeutic care to children, who have been abused or neglected or are at-risk, from one month through to five years of age. Key objectives of the program are the mitigation of the long term negative effects of maltreatment by improving child development.

The centre has a focus on predictable, nurturing and developmentally appropriate experiences that include individually focussed care, medical supervision by nurse staff with health screening and health care plans, daily nutritionally balanced meals, developmental assessment for speech, gross motor and fine motor skills as well as social-emotional status, and targeted therapeutic sessions. A range of parenting support services are provided through the centre, although parent participation in this program is voluntary. A major outcome is therefore providing support to the child to help them become more amenable to parent care, through improved interpersonal functioning, in order to reduce the likelihood of triggering unsupportive behaviours in parents.

The centre has been the subject of a randomised controlled trial (More and Gogerty), which involved a total of 61 children aged between one and twenty four months recruited into the study. Children were referred through Child Welfare Services and were accepted into the study if it was expected they would remain with their families if treatment was provided. Children were randomly assigned to either Child Haven's therapeutic child-care program or standard Child Welfare Services. Short term follow up of families (when?) demonstrated efficacy for individual children, with 69 per cent showing improvement on all clinical indicators assessed. At one year follow up analysis, the homes of the children who had accessed the Child Haven program showed significant improvement in regard to play materials available compared to the control groups. Further, control group homes were found to have experienced declines to household organization and support for the child relative to the intervention group. (Child Haven 1989 – pp 5 ref 2).

At 12 year follow up, it was found that children who received therapeutic child care had significantly improved outcomes relative to the control group participants. Specifically, those who received therapeutic child care were six times less likely to have committed a

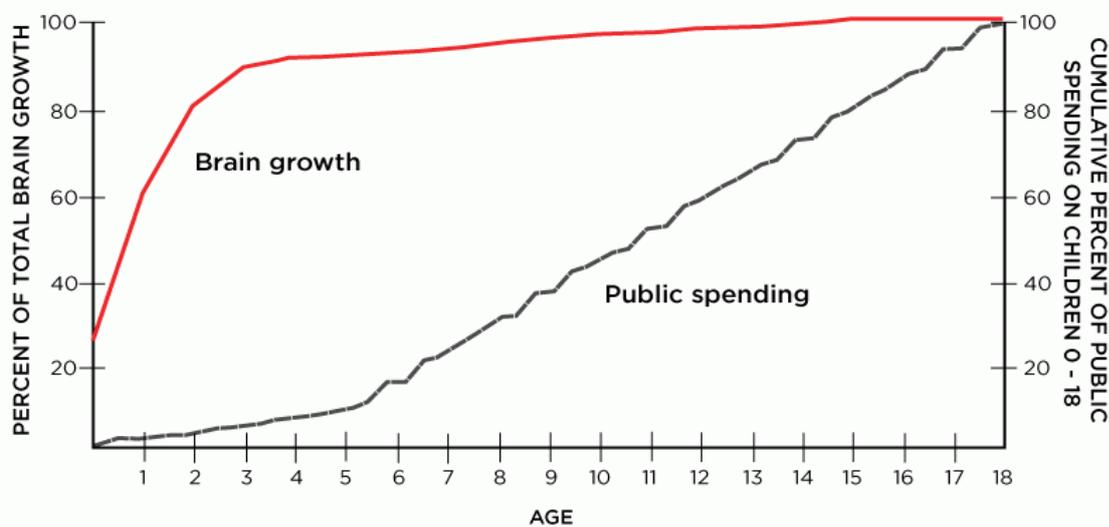
violent juvenile crime, were better adjusted in school, less of a disruption to teachers, and two and half times less likely to abuse drugs. The families of children who received centre based therapeutic care were less reliant on welfare services; families of therapeutic care participants received half as much money in welfare cash grants, medical coupons and food stamps in comparison to the control group, who received social services alone.



Cost effective investment

Outcome studies of early prevention and intervention models highlight the benefits of these approaches. However, government spending has not traditionally invested heavily in these areas. Figure 4 shows the disproportionate relationship between brain growth and public spending in the US (which is not dissimilar to Australia). This shows that at a time when the brain is growing the most and most shaped by environmental stimulation and early intervention, public spending is at its lowest. By investing earlier, it would be expected that later expenditure on remedial programs, special education, and support as adults would be prevented.

Figure 4: The relationship between Brain growth and Public Spending



http://www.childrennow.org/index.php/learn/early_learning_and_development/

Research based on economic arguments suggests the presence of multiplier effects of providing early interventions that result in benefits to individuals, families and communities. The rate of return is higher in early years than at any other time (as seen in Figure 5).

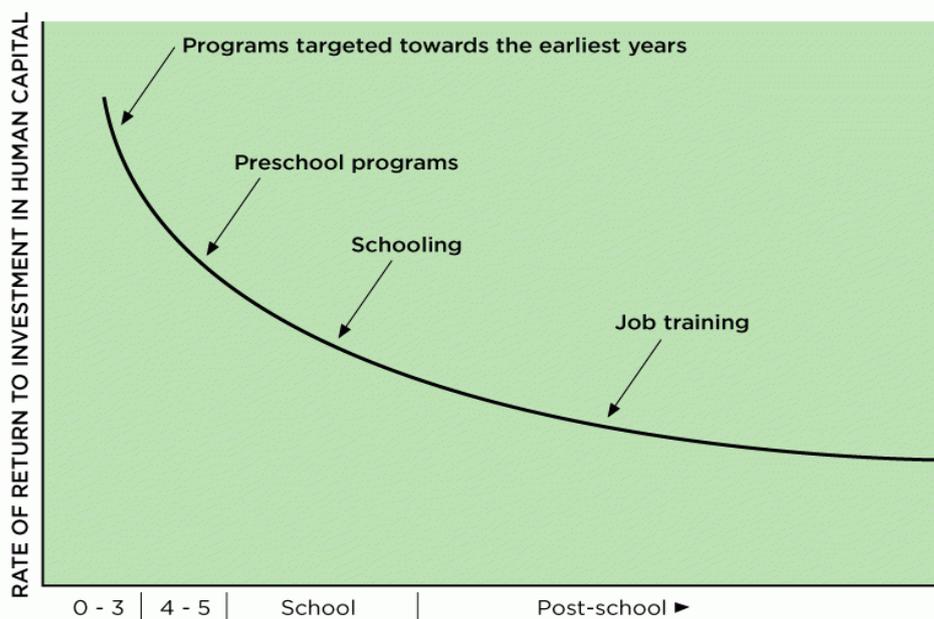


Figure 5. Rate of return for investment across the lifespan (Children Now, 2009)

Summary =

The early years represent a vulnerable period and while it is crucial to ensure developmental delays do not arise, the sensitivity of this period means that even children who have developmental problems are capable of dramatic change in response to intensive intervention programs. The findings highlighted above show that it is not necessary to change the entire social milieu to improve the developmental trajectory for vulnerable children. Interventions can enable healthy development and also mitigate the influence of external factors that can adversely impact on development.

These findings represent a strong argument for investment in the early years. For an organisation like Congress this is significant for both the client, who stands to experience a greater benefit both now and in the future from this type of focus, and the wider community, with benefits potentially inducing transformative change. As has been shown, there are multiplier effects of intervention that can extend beyond the individual child and include the family and broader community.

The findings support current investments that have been made, and indicate a future focus that utilises this knowledge to develop both strategic and operational planning for improved outcomes for children.

PART 2 – Coordinated service delivery utilising a population based approach

Introduction

Congress is committed to ensuring all children can access supports that enable safe developmental passage through a vulnerable period. Central to this approach is the idea that the best way to close the gap is preventing it occurring in the first place. The approach uses a coordinated and long term strategy to drive population change. A major focus of this is the wellbeing of young children, with positive childhood development having long term effects, such as for health through the lifespan and greater likelihood of obtaining and maintaining employment.

An understanding of how children develop, and knowledge of what is possible based on the review of early intervention approaches outlined in Part One, have major implications for policy and program delivery. A key premise of Congress's integrated approach is that with the right supports in place, risk factors are not the determinants of health and education, but simply, issues to be addressed through the appropriately coordinated framework.

The scope to target the appropriate services is made possible with a population based approach. Crucial to achieving this are purposeful partnerships and the need for an overarching action research model that brings together ongoing expert advice, combined with operational knowledge. In addition, it is expected that as current problems are solved new pressures will arise that had not previously existed. This requires a fluidity that only a comprehensive evaluation and action research model can offer.

Crucial also to the success of an integrated model is the implementation on both operational and strategic levels. Operationally this means coordination within and between programs. Strategically this means supportive structures, policies and processes are in place that facilitate and drive this model.

Population perspective

While there is a clear need to provide support for children at risk, approaches often fall short of the integration needed to affect transformative change. A diverse population means a wide range of support services are required. In some instances this diversity has driven a constellation of fragmented services that are not coordinated, and lack the capacity to target and evaluate population change. Scattered stand-alone programs do not have targeted efficiencies, economies of scale, and scope to identify synergies created through a coordinated and integrated approach. Communities with high levels of dysfunction cannot afford for services to be delivered in anything less than a highly efficient manner. This is because the resources needed to produce change are greater where there are higher levels of dysfunction.

. . . . In communities with multiple sources of disadvantage, the independent risks associated with each of these disadvantages tend to compound one another resulting in the average overall risk for individuals becoming substantially higher than in communities having fewer sources of shared disadvantage. This has two important implications for the design, delivery and effectiveness of preventive interventions. First, the level and intensity of the intervention (i.e. program exposure) required to achieve the desired effects are substantially higher than in less vulnerable communities. The second implication is that the very high proportion of individuals at risk makes it more efficient for program delivery to target the entire community rather than seeking to reach only those individuals at increased risk.’ (10).

Population diversity compounds the problem of providing effective services and understanding this is crucial to ensuring appropriate clinical services are in. Aboriginal families in Alice Springs represent a diverse range of people; not all children are subject to the effects of poor developmental stimulation and have poor social and emotional development. Families range from high functioning, educated, working families to multiple risk families who experience difficulties associated with housing, health, substance misuse, and mental health. While this range exists as it does in all communities, we know there to be an over-representation of multi-risk families and developmentally vulnerable children who require specialised and targeted approaches. While some families may access the health clinic once or twice a year for check-ups or minor illness, other children have multiple health concerns and chronic illnesses that require intensive support. The types of support needed to respond effectively for these children and parents are quite different and exist on a continuum. This is reflected in *‘Rebuilding Family Life in Alice Springs and Central Australia: the social and community dimensions of change for our people’* pp 4.

“We must base our work on our social practice within our communities, and our social practice must reflect our “lived experiences” . . . as well as a thorough knowledge of where our people sit on the social gradient, and the cultural and other dimensions of those lived experiences”.

Figure 9 represents the population based approach to ensure this diversity of need can be identified and responded to for both parents and children, and for low and high need levels of support.

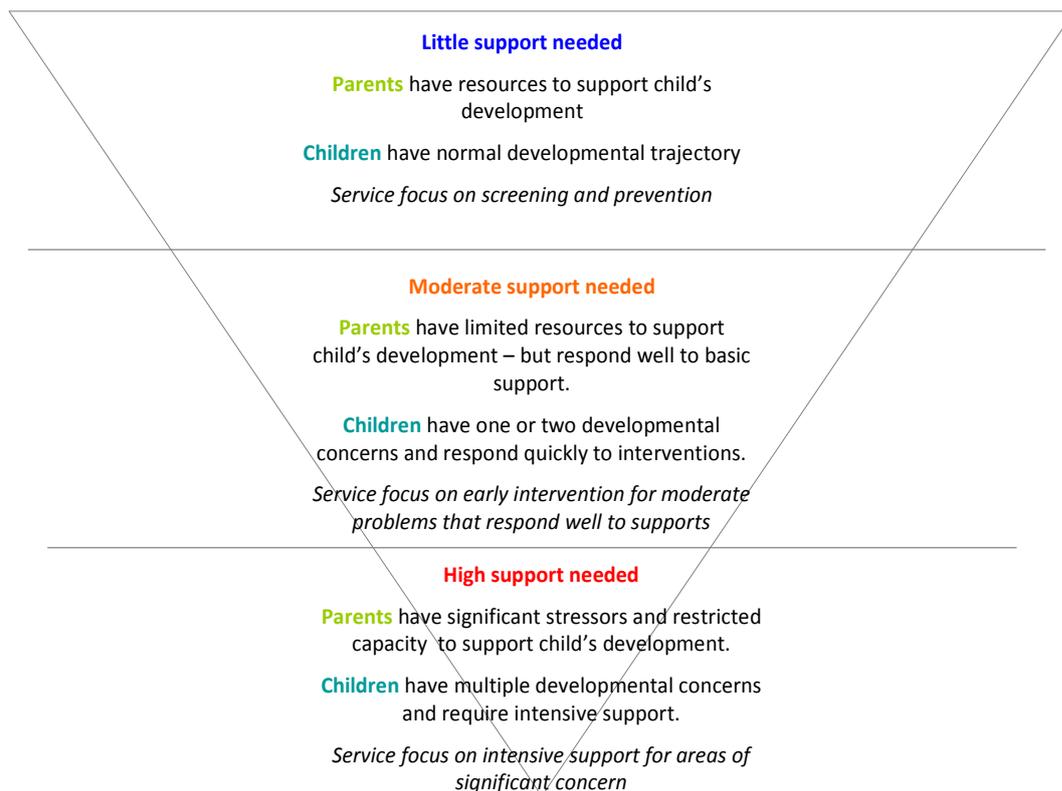


Figure 9: Population based approach linking need to services across parent and child focussed interventions.

This framework means that supports exist on all levels. Because this framework links assessment to intervention, a population focus can be continually updated by aggregated data from individual children and parents.

Having this framework means:

There is a preventative focus: While many children and families may have low support needs, it is important that these children and families are able to access services to improve their likelihood of sustaining a high level of functioning. This is of great importance in vulnerable populations where even high functioning individuals can be at greater risk. Many children, parents and families who are high functioning are still exposed to higher levels of risk within vulnerable populations

There are scaffolded services for those at moderate and high risk: This framework permits step by step progression of supports from high to low levels of support needs. Coordinated approaches will mean decreasing resources are needed as capacity or functioning is improved through the positive experience of programs.

This stepped approach also means that there are appropriate supports to prevent negative decline. Those at highest risk have a pathway to needing less support, and those at the lowest levels of risk have the opportunity to access a depth of support services, should they be required.

Taken together, this model intends for support services to collectively enable a 'ratchet effect' for population health, where it is possible to move forward, and difficult to move back.

Operational approaches to using population perspective

Although a community based primary health organisation such as Congress brings with it the capacity to build services utilising an integrated, population based model, this has required careful consideration of how population contact can be utilised for effective and integrated service delivery. Just as stand-alone programs from single organisations are limited in their effectiveness, there is a real risk for this fragmentation to exist even within an organisation where a coordinated approach is not emphasized.

Because Congress engages in an assessment process across the population, it is possible to ensure the most suited clients access the most appropriate programs. Of equal importance, this also means data collectively identifies the programs that are best placed to service the community's need. This represents a scientific approach focussed not only on the application of evidence-based research, but also on the ongoing evaluation of outcomes and the reflection on operational experience.

Successful implementation of this approach has operational implications ranging from clinical practice through to executive decision making. Guiding principles of an integrated population approach include:

- **Scientific approach** with a central formulation that drives identification of programs, goal setting, and the ongoing evaluation of strategies implemented.
- **Application of working knowledge** that supports the meaningful implementation of empirical evidence within an understanding of both barriers and pathways to effective service delivery on a local level.
- **Common goals** that give focus to a coordinated approach and direction for an overarching evaluative framework.
- **Consistent approach to screening** that enables client needs to be identified and referred, and population information to be aggregated to maintain clinically relevant services and programs.

- **Purposeful partnerships** that are needed for the synthesis of empirical research and analysis of a large volume of data gathered through a population approach that will be applied to a comprehensive model of continual improvement.
- **Mapped Synergies** between programs that mean services can be provided when programs work together that would not be provided by either program alone.
- **Internal alliances** that bring together a collective investment of a whole-of-agency approach. This supports child and family approaches to exist in a logical context of broader Congress programs.

These are discussed here in greater detail:

Scientific Approach

A scientific model combined with a population approach provides the capacity to:

- identity needs on a large scale (assessment)
- develop a formulation for the origin of problems (hypothesis)
- identify targeted areas for improvement (goals)
- source and provide interventions that are based on most recently available research (intervention)
- assess the extent to which these have been effective (review / evaluation).

Standardising approaches to assessment (summarised later below) enable data to be aggregated in a way that supports clear identification of problems. This also enables a precise defining of problems. The synthesis of these data enable a formulation to take shape that can support interventions, which will be likely to have greatest effect for both the individual and also the larger cohort. This is central to the Congress model of implementing programs that are individually effective yet collectively transformative. This is reflected in the formulation below for an integrated approach for children.

Formulation – (pre-birth to five)

For children at risk to achieve their potential as adults, they need access to comprehensive services during the early years of life, when they are most vulnerable. Comprehensive health services are most effective when they provide a combination of preventative and targeted interventions for children with difficulties (secondary prevention). Long term benefits will be experienced where interventions address two key problems that arise in early childhood and have an impact across the lifespan. These are: poor stimulation leading to developmental delays and regulation difficulties that emerge from poor child –carer relationships. Effective delivery of preventative and early intervention supports are

enhanced when coordinated with population based primary health services with a focus on comprehensive developmental assessment.

Development of intervention

A scientific model also supports the development of innovations. There is a great need for effective interventions and vulnerable children cannot afford the luxury of waiting for the scientific community alone to identify all of the solutions. A scientific approach, however, based on detailed data analysis permits the development of new approaches where they are most needed. For example, Rough and Tumble play has been suggested by leading scientists to hold promise as an intervention for development of emotional regulation (e.g., Shore, Porges). While not yet supported by clinical trials, there are clear arguments for its effectiveness and Congress is well placed to engage in pilot studies utilising this approach. If successful, this could be integrated as one of several evidence based approaches to address the problem of emotional regulation.

Application of working knowledge (and barriers to effective service delivery)

Through its long experience in providing services in this area, Congress is able to identify difficulties in efficiently delivering programs. Evidence based approaches may be limited by the extent to which they can be applied in Central Australia. A perspective that can identify potential difficulties is therefore important. Many approaches that 'should' work have been limited by what happens in reality and applying a working knowledge to empirically supported interventions is crucial in overcoming this risk. This position is also supported in the cabinet paper 'Rebuilding Family Life in Alice Springs and Central Australia: the social and community dimensions of change for our people" pp 4: "**Having the evidence is not enough; knowing what "best practice" is not adequate. The best of ideas, the best of our knowledge, must come from a well-grounded base within our communities**".

These specific risks are outlined below with the implications for service delivery highlighted.

Risk 1: Population Transience

Definition: Alice Springs has a transient population. Many clients of Congress spend some of their time living in Alice Springs, and some time living in remote communities. This transience also exists within Alice Springs, with some clients having addresses that may change monthly, weekly and even daily. This has implications for how a service effectively connects and provides support to its client base.

Solutions for effective service delivery:

No single entry point: Because children and family members may come to Alice Springs at any time across a vulnerable period of growth and development it is important that there

are appropriate referral options at all ages. Linking targeted programs to referrals from a free-to-access comprehensive child health clinic makes this possible.

Module based approach: Because it cannot be assumed that children and family members will maintain contact with services throughout early years a focus on intensive programs is emphasised. While options should exist for children and families who sustain contact, for many of the most at risk the window to provide intervention may be small, thus efficient use of these opportunities to intervene is imperative.

Risk 2: Sustained period of developmental vulnerability

Definition: The early years represent a period where the developing child is highly vulnerable across consecutive years. This means that for normal development to be sustained there is a need for programs to be structured in a manner that enable safe developmental passage across this whole period.

Solutions for effective service delivery: While we cannot remove all the risk that young children will be exposed to, with sustained support there is scope to maintain protective factors across a crucial time of development. To achieve this it is important that programs comprehensively cover the most crucial phase of development. Programs should be 'interlocked' and strategically mapped to ensure coverage is complete. This requires a high level of program engineering. The best models can be considered where there is a clear defining of the various paradigms of influence and program modalities. This includes clear consideration of Primary and Secondary levels of intervention, Outreach and Centre based approaches, and child focussed and carer focussed interventions.

Risk 3: Lack of child-centred interventions

Definition: Congress advocates for family support models that focus on strengthening families and improving parenting skills. Such approaches are supported by evidence and have been successfully implemented within Congress such as TFSS (Targeted Family Support Services) and IFS (Intensive Family Support). However, it is important to recognise the limitations of such approaches for the developing child of where outcomes are *dependent* on capacity building and the up skilling of vulnerable families. Three major risks emerge when this is the **only** support approach used are summarised below.

Capacity may not improve sufficiently to support healthy growth

While some vulnerable parents and families may dramatically improve their capacity to effectively raise children, this improvement may be insufficient to support the child's full development. For instance, educational level of parents is a strong predictor for brain development in the early years. Significant differences manifest between children raised by college educated parents and children raised by high school only educated parents (48). If this difference can equate to different

developmental trajectories for children it is likely many parents who improve their skills are still falling short of that which is needed for optimal growth.

Lag-time means children will have passed critical periods of development

The developing brain is such that it cannot wait for parents / guardians to develop the capacity to provide an environment necessary for growth. The intense vulnerability and small window in which important experiences are required means that even if parents do improve their parenting to a point that is sufficient for growth of their children, key opportunities for positive stimulation and growth have been missed.

Children with high support needs require intensive support

By the time children and their parents have been identified for support programs, the child is likely to have already been exposed to a level of abuse and neglect that will mean high support needs that would strain even high functioning parents and families. These problems can also limit and demoralise parents as they seek to develop the capacity to manage their child's developmental concerns. Highly qualified and skilled professional staff can struggle with the clinical severity of such difficulties and an expectation that multi-risk parents and families will develop the necessary capacity may be too great in many cases.

Solutions for effective service delivery: Because child development cannot be put on hold while parents are acquiring the required skills for this role, it is necessary that supports are provided to enable their potential to develop while parents are improving this capacity. A centre based approach means that children can experience what they need for healthy growth *while* parents develop the capacity to sustain this growth. This argument is supported by findings of 'Project Care' which, as mentioned previously, found no significant difference between the control group and a family support group in terms of developmental outcomes for children. It was only the combined direct centre based care with parent support that significant gains relative to controls were demonstrated.

Additionally, by addressing some of the major emotional and behavioural difficulties that are likely to have arisen through neglect, children are much more amenable to their parents and are more readily able to reinforce improved parenting skills as described in the Child haven study. Understanding that the nature of child-parent influence is bi-directional allows for outcomes to be maximised by using both child focussed and parent focussed approaches.

Risk 4: Program drift

Definition: Program drift occurs where a program is distracted from its original strategic focus. This can happen where programs operate in vulnerable populations where staff are

overwhelmed by ‘serviceable needs’. The result of this is often a workforce invested in solving problems that do not always bear resemblance to the logic of the program from which their positions derive. This is exaggerated where program activities are not well defined.

Solutions for effective service delivery: To avoid programs drifting away from key target areas it is important to build into programs a heavy focus on program fidelity and program logic. Programs are less likely to drift where there are clear program goals, established mechanisms to monitor program activity, and detailed mapping of program procedures (defined staff activity) against program outcomes. This is also supported through Congress’s focus on providing interventions, and lobbying for services that are needed to be provided.

Risk 5: *Those most vulnerable are the least likely to seek and engage with support*

Definition: As highlighted in figure 9, child and family needs exist on a continuum. There are some children who are at very high levels of risk or in protective care and these children and families often receive high levels of support. On the other end of the continuum are higher functioning children and their families who are able to effectively seek out and utilise available services. There are many children who have parents without the capacity to fully engage them in activities that support optimal growth, however, are not at risk of having children enter protective care. These children are still, however, at a major risk of not meeting their developmental potential.

Solutions for effective service delivery: The integrated model proposed, through population based contact, has a focus on referral based on identified need. This is reflected in an appreciation for the full range of services needed, as depicted in Figure 9. This approach recognises that there are many children at risk of not reaching their developmental potential and this does not necessarily mean they need to experience severe neglect or abuse to be eligible for appropriate support.

Common Goals

Common goals align programs and give meaning to an overarching evaluative framework. While many programs in the pre-birth to five cohorts have a specific focus, a collective aim supports programs to contribute to a process which means the outcomes together are greater than the sum of these provided individually. Common goals listed below are integral to all child focussed programs:

- **Children will have the opportunity to experience optimal growth and development**

This is true for children at all ages for the birth to five focus. Experiences that support normal growth begin from the time of conception and continue through childhood. For instance, approaches that encourage mothers to avoid drinking alcohol and smoking, referrals of children to specialised services, health checks that

monitor growth and update immunisation schedules, along with the provision of developmental stimulation for those at risk all focus on supporting optimal growth. While these interventions may be provided through different programs, they collectively support the experience of optimal growth and development.

- **Normal trajectory of development is followed from birth with no measurable developmental delays or emotional difficulties at age five.**

While a complement of programs is proposed that enables children and their families' access to services to support normal growth, assessing and ensuring the growth outcomes is crucial. The capacity to develop an overarching framework that considers developmental milestones from a population level, from birth to five is a massive undertaking, although it is considered achievable through primary health care provided services. This includes the use of cognitive and language growth charts, along with WHO (World Health Organisation) height and weight charts to support a genuine holistic approach to assessing and supporting development. This will enable accurate evaluation of population based improvement underpinning an expectation of normal development.

- **Children are able to engage in schooling at entry point without developmental impediments to success in school and beyond.**

Children require healthy development during the early years to be able to effectively engage in school. A crucial aspect of this will be the school readiness and success in the first years at school. Improved school readiness at a population level will be a key indicator for the effectiveness of a coordinated approach.

- **Children develop the social, emotional and relationship skills to be valuable contributors to the social health of their families.**

This is a medium term outcome of intervention and recognises that improving the functioning of an individual improves their potential to make a positive contribution to their social networks (short term outcome using systems theory modelling).

- **Children grow into adults who will be valuable contribution to their community through their personal, professional and family's lives.**

This will be a long term goal of intervention, and will form part of the strategy to follow children up into adulthood. This information will be important for longitudinal evaluation of this integrated model.

Consistent approach to screening

Standardising screening is important for a population approach. On an individual client basis this means referrals and treatment are specific. On a population level it enables this

information to be collated, ensuring gaps in services are rapidly identified and effectiveness of approaches reviewed.

Primary screening for child health and development are undertaken as part of comprehensive child health checks. Having the child health check as the focal point of early identification means individuals receive high quality and consistent service, and also this information, when aggregated helps paint a larger picture that supports the targeting of interventions. This will take place as either:

- the child being referred to a program **after undertaking a comprehensive child health check**

OR

- The child receives a comprehensive child health check **as a part of their assessment** in the program they are involved in (ie, TFSS, Preschool Readiness, Child Health Outreach Program).

Secondary assessment takes place as children engage with and experience other programs that provide specific interventions. Within programs it is important that the same standardised approach to assessment is undertaken. This may involve specific developmental assessment for children at risk, parent questionnaires, and surveys of family need and family risk assessments. Through these being consistently administered at the point of engagement this establishes specific targets for intervention and also a baseline level for review and evaluation. On a cohort basis this also enables a more detailed review of the issues that are identified after children and their families are referred for service.

The centre based approach (outlined in Part 3) describes the need for a specific unit focussed on comprehensive developmental assessment for children who have been identified as having developmental problems. This would support assessment of all children at risk engaged in programs.

Purposeful Partnerships

Achieving a successful integrated model that uses individual data, aggregated to a population level to drive strategic programs and evaluate their effectiveness is a significant undertaking. The partnerships needed for this approach to be effective are outlined:

Partnership with leading academics and research institutions:

Congress is primarily a service provider. While there is a component of reviewing research to identify evidence based programs, and analysis of available data to evaluate programs and needed services, investment in human capital is centred heavily on practitioners. Partnership with leading academics who have invested careers in reviewing research and analysing data represent major assets to an integrated approach. Partnership agreements

with research institutions also will support the resources needed to manage the volume of synthesis required. This will mean a partnership agreement that goes well beyond a single project and can support an ongoing and improved capacity for rigorous review and input into program operation.

Partnership with key service providers:

Partnerships with other key service providers in health and education are important for following up children, and enabling the detail of information gathered to support approaches by other providers. Input from professional representative from both Education and secondary health services would form part of this partnership.

Mapped Synergies

The range of services and resources that collectively make up all child focussed program means there is current potential to enhance services without the need for additional resources.

Specifically, over the last two years there has been collaboration between Congress Child Care and various other child focussed programs. This has enabled specific programs to be developed that engage children in child care and either provide intensive support to the child and or respite for the carer. This has also enabled the combination of child focussed and parent and families focussed interventions to work together.

This capability can benefit several child focussed programs including Targeted Family Support Services, Child Health Outreach Program and the Preschool Readiness Program.

While this has existed informally and been developed through consultation with team leaders and branch managers, formalising this process as part of the integrated model is important to consolidate a coordinated approach. Specifically, this will mean 15 places would be used for identified children with intensive support needs and 40 places that would be identified as long day care places that working families could access. This will be important for continuing capacity to provide and expand this service.

Complementary programming

Given the breadth of client contact and services provided by Congress there is scope to map secondary gains from other programs not specifically child-related. Healthy parents tend to raise healthy children and this understanding is crucial in supporting a population perspective of change. Two examples of integrated alliances include Safe and Sober and also the Healthy Lifestyles Program, with successful implementation of these programs having potentially major impact for the wellbeing and future health of children. Appreciating the context and significance of this is an important aspect of an integrated child focussed services approach and this is outlined in the examples below.

Healthy Lifestyle program: A Healthy lifestyle can promote many positive outcomes that impact on several aspects of wellbeing including physical health and mental health. Impaired parental mental health and physical health conditions are known risk factors that impact on the wellbeing and development of children (ref). Improving functioning in these areas may represent an efficient approach to preventing the need for intervention services for children.

Tobacco Cessation: Mothers who smoke during pregnancy expose their children to high levels of risk (ie. low birth weight and pre term birth can result in co morbidities) Infants exposed to passive smoke are also at much higher risk of respiratory conditions and SIDS (ref). Reducing smoking rates in mothers is a key focus of this program and has scope to reduce the need for child intervention services.

Safe and Sober: The Safe and Sober Program targets clients with alcohol related problems. Reducing disorders of alcohol use in parents and family members has significant scope to improve outcomes for children. Alcohol abuse is a leading cause of childhood regulation difficulty, abuse, neglect and subsequent developmental delay. Direct effects occur with exposure *in utero* having long lasting developmental consequences. Alcohol is a powerful neurotoxin and the result of exposure in early pregnancy can be the death of a large number of neurons (page 172 BB Olney, Farber, Wozniak, Jevtovic-Todorovic, & Ikonomidou, 2000).

Several aspects of drinking alcohol impact negatively on children with secondary effects occurring before, during and after consumption. Specifically:

- **Before:** seeking alcohol can lead to neglect and reduced attention given to child
- **During:** Intoxication and consumption leads to inconsistent parenting, higher risk of exposure to domestic violence and a general increased likelihood of neglect and or abuse.
- **After:** Recovery leads to neglect and reduced capacity to provide care.

The reduction of problematic alcohol consumption stands to dramatically reduce the risk to children of experiencing these problems, and also reduces the likelihood of vulnerable children developing alcohol dependency and abuse problems in later life. Limiting the extent to which alcohol use and associated behaviours impact on child development is of great strategic importance.

“Consequences for a child with a substance-abusing parent include threats to the child’s physical, cognitive and emotional health and well-being. The lives of substance abusing parents tend to be chaotic and highly unstructured (Duncan & Reder, 2003). Rules are likely to be applied inconsistently and there may be a poor level of supervision for the child. A parent may respond to their child’s behaviour differently when sober and when intoxicated.”

Therefore, children of substance users can fail to develop an understanding of cause and effect and thus fail to develop internal control of their behaviour. In addition, substance abusing parents spend large amounts of time and energy on drug-related activities, including attaining drugs and spending time recovering (Duncan & Reder, 2003). Children can suffer neglect, or may be forced to take on a parenting role. They may experience isolation, constant unavailability of their caregiver and attachment problems. According to Duncan & Reder, (2003, p. 200) “the worst prognosis for a child is when their parent misuses drugs or alcohol”.

While three examples have been provided above, connections can be made to several other programs that do not directly fall under child and family services, and include (but are not limited to) Men’s Health, Social Emotional Wellbeing, Clinical Health Clinic (Services branch). Because all programs use the same system for recording activity and client contact there is scope for the organisation to engage in the process of ‘procedural mapping’. This supports a detailed analysis of how interventions are provided to the whole community. Two key areas of mapping are child and parent focussed approaches, and also primary and secondary gains. This mapping enables a focus on understanding how the whole organisation inputs interventions across a community level. This, combined with an overarching evaluative framework enables modelling of effective community development interventions to be linked to individual quality care.

Summary

Key guiding principles outlined above represent major potential for positive and sustained population change. The right combination of services can provide transformative change.

Adherence to these guiding principles means having no gap at five is manageable, measurable, meaningful, and will bring with it multiplier effects for children and their families as well as the whole community.

For this to be effective in the long term it is important that an integrated perspective sits within both the organisation’s strategic and operational framework. The significance of these principles highlighted above and their relationship to strategic and operational focus are described in detail below.

Strategic framework

While the above section outlines the integration of working understanding with applied empirical knowledge, this exists within the context of Congress’ strategic framework (Cabinet Dreaming) and relevant National goals such as Council of Australian Governments (COAG). The integration of these perspectives both locally and nationally are outlined below.

Cabinet Dreaming and integrated model:

Cabinet Dreaming goals:	How these relate to integrated approach to children services
To be the leading Primary Health Care provider for Aboriginal people in Australia.	Congress has developed a significant portfolio in successful delivery of child focussed services. This integrated model will capture and utilise this knowledge to generate sustained and coordinated efforts to improve outcomes for developmentally vulnerable children. All guiding principles listed above will contribute to Congress to sustaining its place as the leading primary health care provider for childhood services.
To improve the health of our community.	The integrated model has, as its focus, positive transformational change through targeted child and family services. This provides a perspective for applying clinical and support services with efficiency on a population basis. 'Common goals' is a key guiding principle that supports measured improvement of community health across successive years.
To provide the highest quality services to our community.	The dual processing model (described below) ensures current interventions are effective and received by children who are identified through comprehensive regular health and developmental screening. This model ensures that treatments are appropriately provided and reviewed at an individual client basis – but also the needs identified and effectiveness of outcomes continually informs the need for services and improved operations.
To assist communities who wish to establish their own community controlled health service.	This model can be replicated. While specific programs may vary, the model of integrated child services within a primary health organisation can be generalised. This can support best practice for other communities, and also support ongoing identification of funding needs.
To remain a community controlled organisation.	A focal point of this model is the application of community based perspectives that incorporate empirical knowledge. This is intended not as a compromise but a strengthening of what community controlled organisation can provide. A reflective model that deliberately pulls a range of perspectives into a coordinated strategy is likely to be most successful. In

	this manner, the community controlled aspect is clearly one that strengthens the capacity to link what is known from outside the local community, to what is needed and can be implemented locally.
To provide opportunities for Aboriginal people to train in all areas relevant to Congress.	The identification of child services highlights an area of great opportunity for training and development.
To maintain self-determination.	From a developmental and neurological perspective, and as highlighted in this document, an individual's capacity for informed choice and self-determination is significantly impacted on by experiences in childhood.
To secure the financial resources to continue Cabinet's Dreaming.	This model provides a detailed process for modelling and providing efficient services. This will support improving the model for how funding needs are identified and subsequent outcomes are evaluated.
To expand the services offered by Congress consistent with community needs.	The standardised assessment of individuals and utilisation of this data on a population level means the need for expansion is accurately identified and will support funding submissions.

COAG and the integrated model

This formulation is consistent with the (COAG) goals for *investing in the early years* and *closing the gap for indigenous disadvantage*. These are summarised below:

Investing in the early years goals	How these relate to integrated approach to children services
Providing Access for All Children to Preschool	One of the key programs identified and included in this model is a Preschool Readiness Program to support children transition from home to school. Also identified in this document is the need for services to exist well before children are of eligible school age to enable children the cognitive intervention to benefit from schooling
Closing the Gap on Indigenous Early	Key outcome is year to year, measurable improvement in the developmental status of

Childhood Development	children. This includes children sustaining healthy growth across the birth-to-five age group and also improvement in birth cohort related outcomes. AEDI data will be included in the evaluative framework that ensures children are better able to perform well on this measure.
Better Child Care and Early Childhood Education	Improving access to enriched child care for children most vulnerable is a major goal of the application for a centre based approach that includes the Abecedarian model of childcare.
Keeping Australian Children Safe from Harm	A centre based approach will support sustained cognitive growth for children at risk, and will also mean there is a high quality therapeutic service for those who have suffered.

Closing the Gap in Indigenous Disadvantage	How these relate to integrated approach to children services
Close the gap in life expectancy within a generation (by 2031)	Good health is strongly associated with positive education outcomes and also associated with better mental health outcomes (ref). Improving the trajectory of children's lives is expected to have a cascading impact across all future development. Reducing developmental concerns and improving the capacity for children to engage and succeed in education is key to promoting more health life choices, reducing chronic health conditions, and increasing life expectancy.
Halve the gap in mortality rates for Indigenous children under five by 2018	A major area of this coordinated approach is focussed screening and referral of children age zero to five.
Ensure access to early childhood education for all Indigenous four year olds in remote communities by 2013	As mentioned – the Preschool Readiness program is supporting children to engage in education. Additionally, Congress is a leading organisation that has scope to support enriched childhood experiences

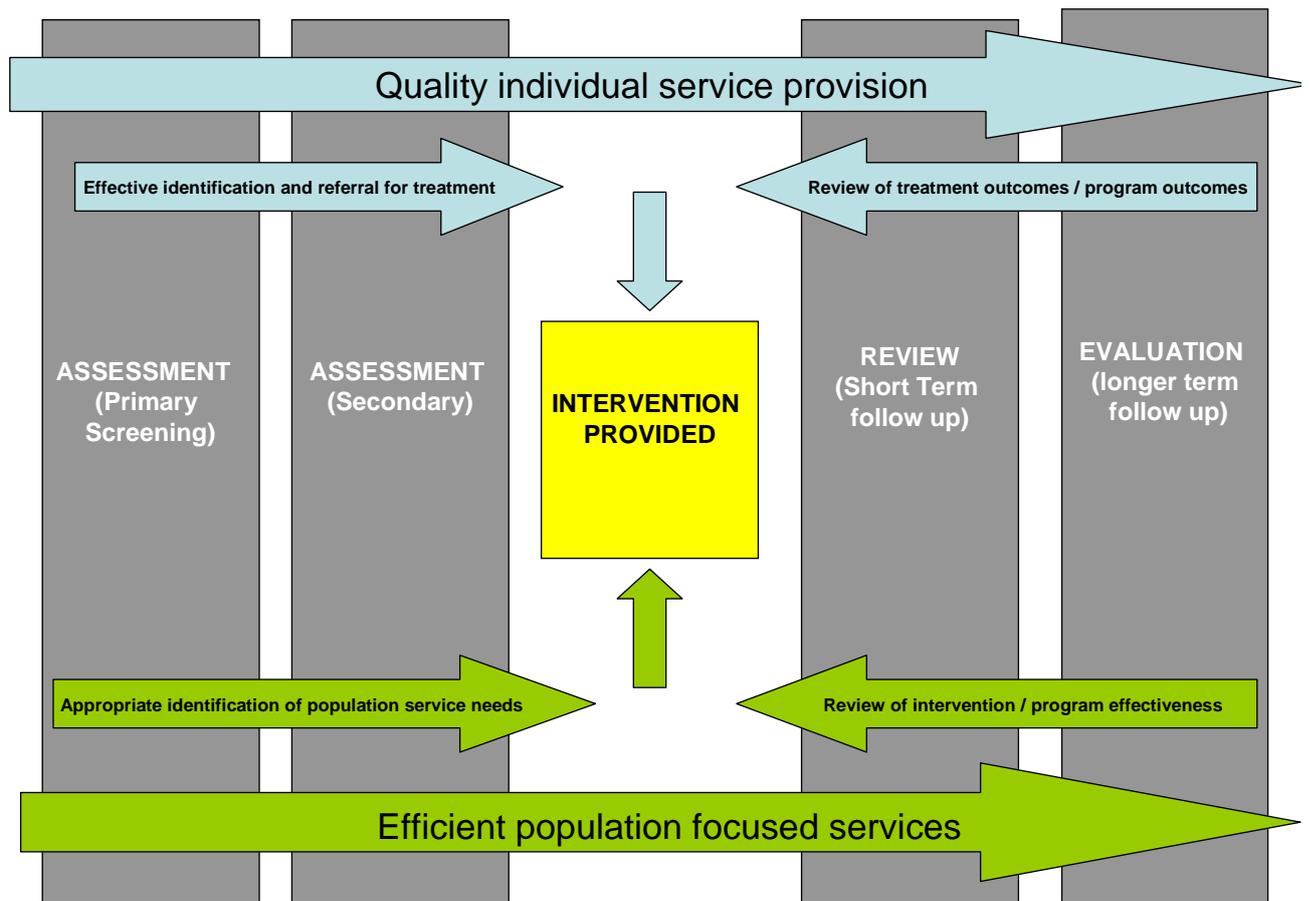
	for families in isolated centres
Halve the gap in reading, writing and numeracy achievements for children by 2018	A major reason children do not achieve literacy and numeracy is because they have not ever had the early experiences necessary for success and engagement in school. This model provides the scaffolding required for at risk children to start school with the potential to engage and succeed.
Halve the gap for Indigenous students in Year 12 (or equivalent) attainment rates by 2020	As above
Halve the gap in employment outcomes between Indigenous and other Australians by 2018	As above

Operational framework

Supporting operational frameworks for this proposal are outlined below:

- **Operational map for an integrated model: Dual processing:** outlines the model for the **processing** of individual and population data needed for transformational change.
- **Integration map** outlines examples of how the model would work for individual programs and connects assessment, referral, intervention, and review. Two examples are provided to demonstrate how this could operate across programs.
- **Program map** outlines programs that currently exist and also programs that are needed based on what we know through evaluation and
- **Structural map** that places this approach within the context of the organisation as a whole, and identifies the partnerships needed to support this process of implementation and evaluation.

Figure: Operational map for an integrated model: Dual processing model:



Dual model of individual and population based action research model

The dual model described above represents an action research approach that operates on both individual and population levels. This described the theoretical mechanism through which both individual and population based data continually feedback to clinical practice and program development.

Individual level:

High quality individual service provision is achieved where comprehensive screening leads to appropriate referral. These referrals are also required to link to further assessment that can focus interventions and provide review to ensure the treatment was effective. Assessment will also form the baseline for review and evaluation, with review providing immediate feedback of short term benefits and evaluation representing long term follow up. Review feeds back to the need for ongoing treatment of additional referral, ensuring individuals receive a high quality of service. Maintaining the integrity of this practice for individual clients is the responsibility of team leaders and program managers. Ensuring

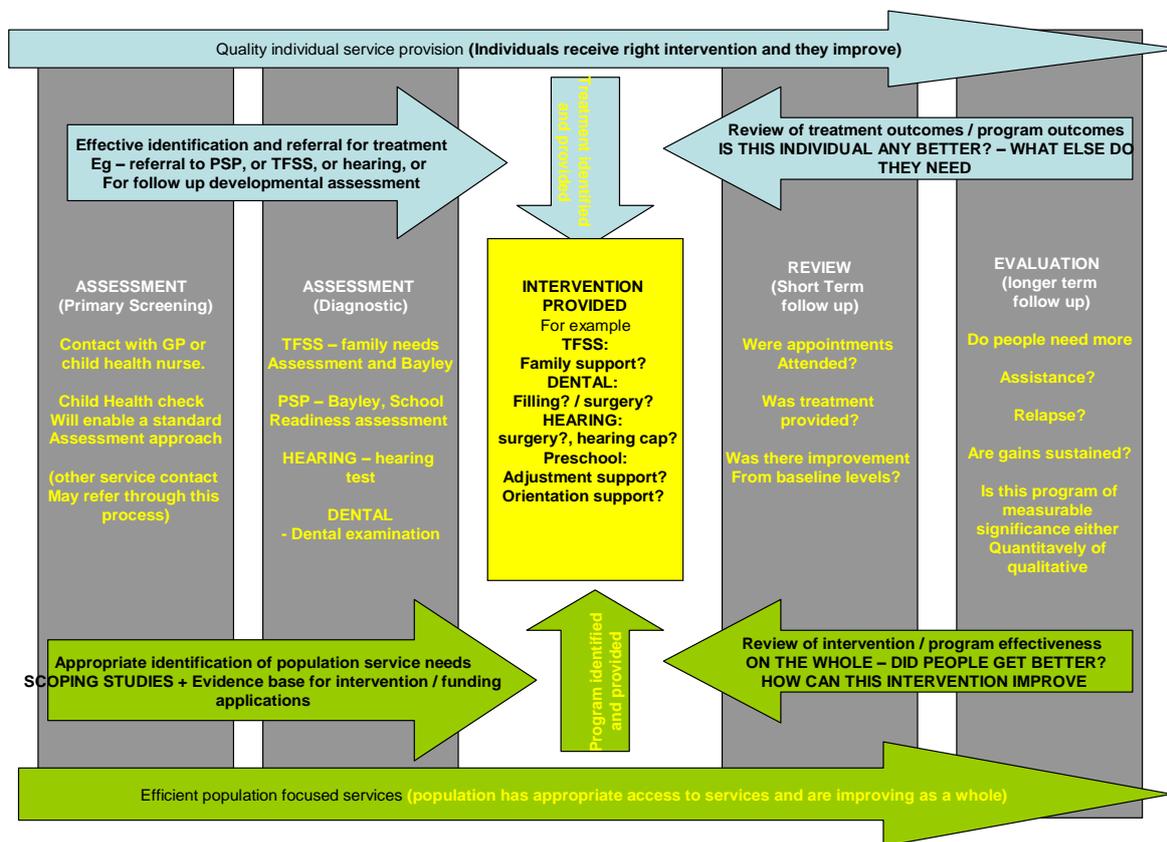
assessment and review data are collected as a part of this process is crucial for supporting the second level of parallel processing that takes place on a population cohort basis.

This is a key responsibility of program team leaders and managers of child services and family services programs.

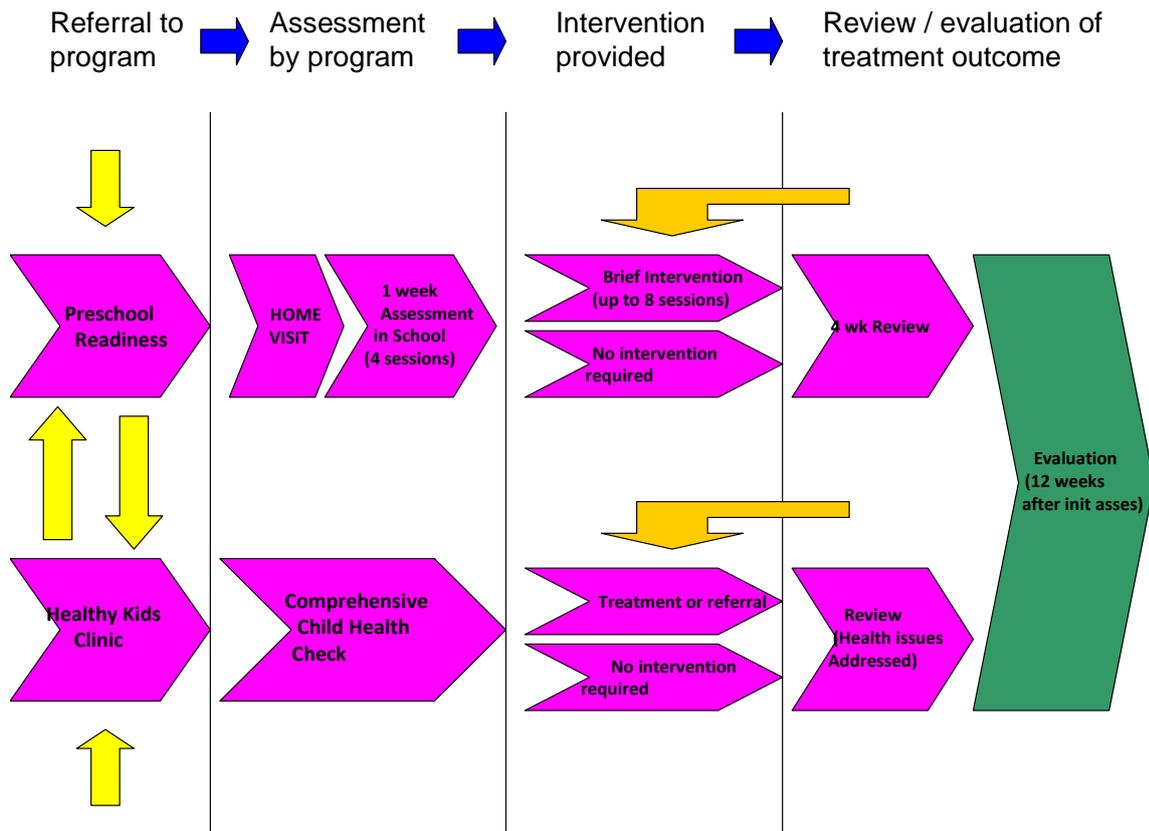
Population and cohort basis:

Ensuring services are provided are based on identified need, and that there are successive year to year improvements in the population are achieved through the second tier of the dual processing model. Because of standardisation to assessment processes, there is not only equity in how needs are referred for service, but also the ability to ensure the right programs exist. Scoping studies can be regularly reviewed through screening information and also diagnostic assessment procedures followed.

Integration map (working examples of programs):



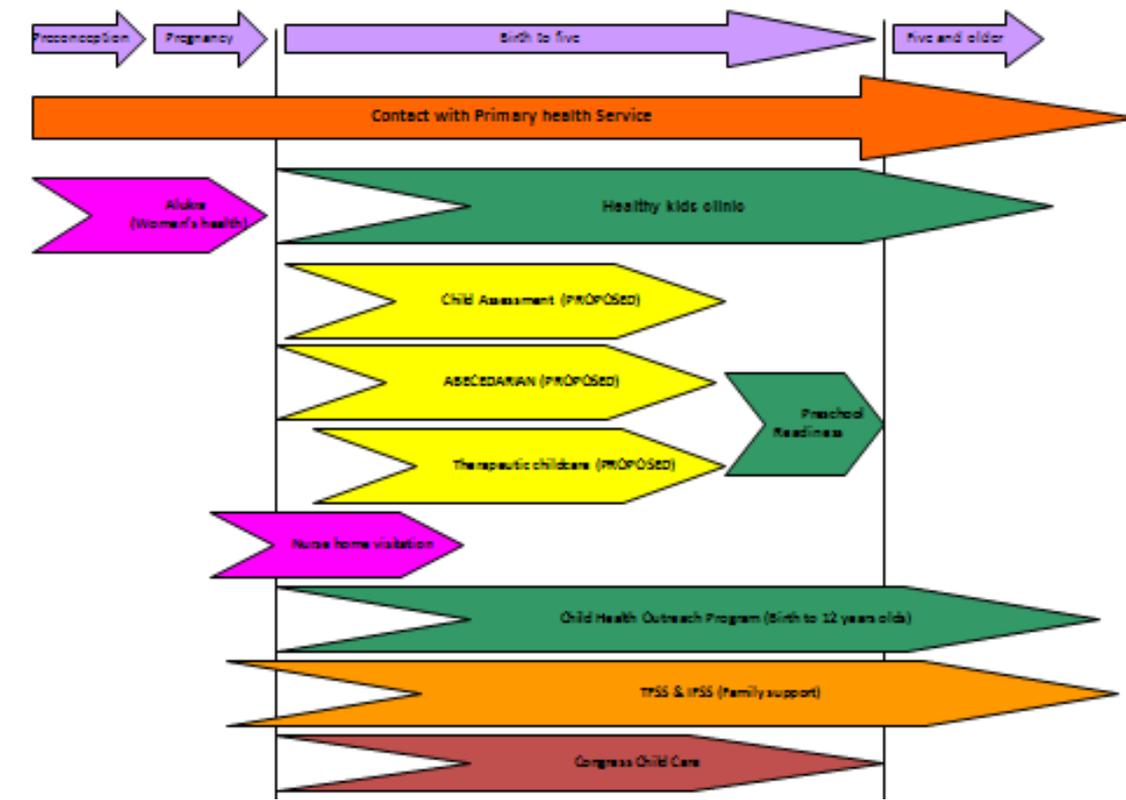
Integration map (working examples of programs):



This flow diagram highlights an example of how this model supports integration between programs and improved review and evaluation across programs. Children referred to the Preschool Readiness Program are all required to have their three or four year old child health checks completed and are referred to the health kids clinic for this to be undertaken.

Children aged three or four who access the health Kids clinic will have outstanding recalls for 'enrollment in preschool' will similarly be referred to the preschool readiness. Procedures that are provided and followed up thus ensuring quality care and the effectiveness of services provided.

Figure: Program map of current and future programs



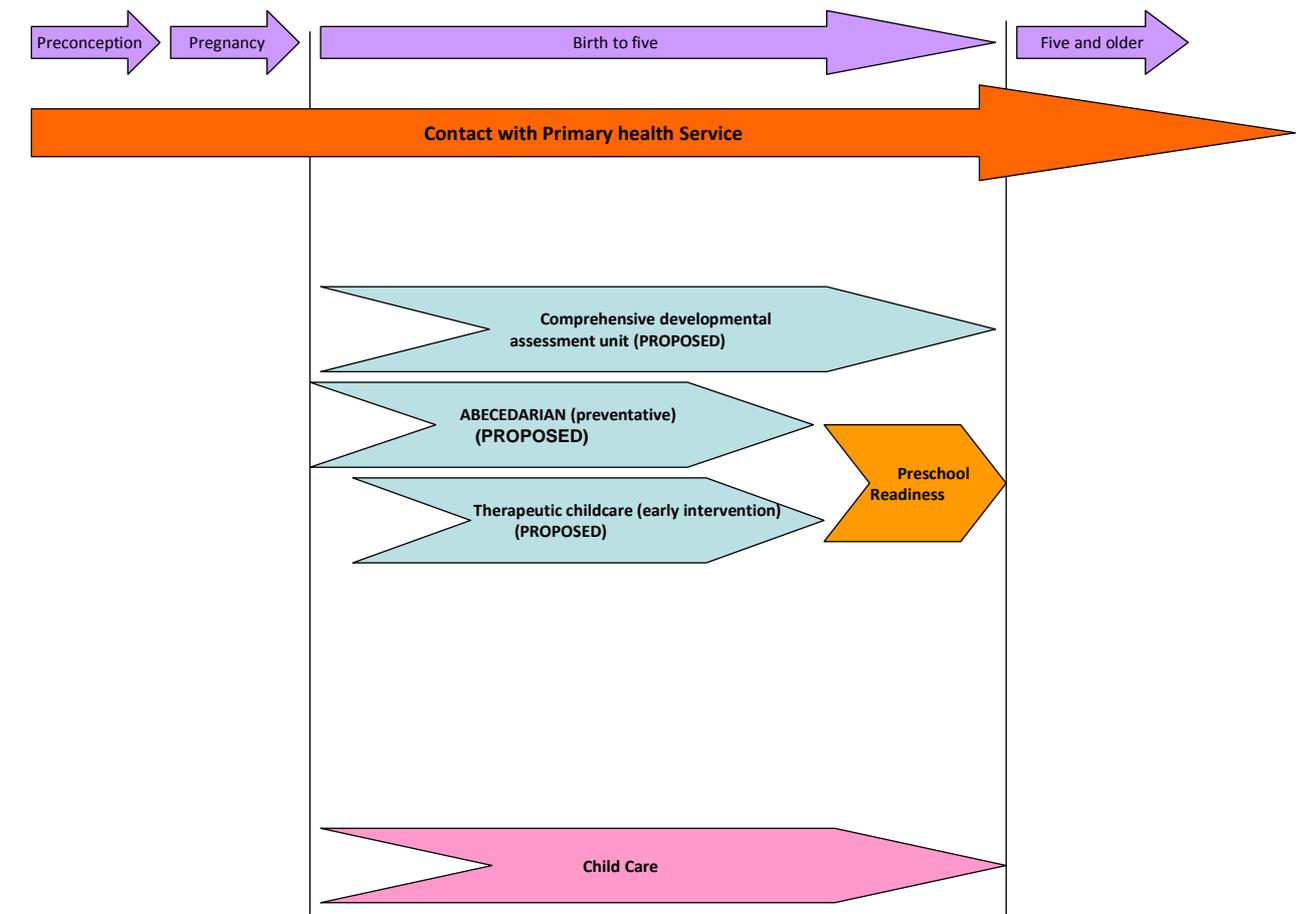
The program map outlines key programs and services based on existing and proposed services based on identified community needs. All programs sit within the formulation for Congress' approach to early childhood. The evaluative framework sits across all these programs, and provides a central housing of information for synthesis of program outputs and client outcomes.

The programs are integrated through the consistent goals of ensuring developmental problems do not arise, and providing interventions if they do. Additionally, interventions needed will be identified through analysis of population based data, developed based on what is known of empirical research, and delivered with consideration of a working knowledge of regional issues.

- Strategically placed, evidence based programs that provide opportunity for enhanced developmental pathways with long term outcomes (Family Nurse Partnership, Abecedarian, Preschool Readiness Program).
- Clinically based services that comprehensively address physical and mental health of children under 5 (healthy kids clinic and Infant and a focus on infant and toddler mental health).
- Programs and services are placed across this important phase of child development to enable multiple entry points for children and families in the 0 – 5 range.

- Programs are identified that are complementary and support common goals outlined above.
- This program map is intended to be evolving and based on ongoing review of what is needed for children and an analysis of program effectiveness.

Figure: Program map of current and future programs that ONLY include a focus on children aged zero to five



Proposed improvements that can be made within existing resources

Several aspects of the framework are already in operation: This includes Child Health Checks taking place on a larger scale and more programs using this as a standard requirement to support case management and review. This also includes moves underway to identify places in Child Care for intensive support so that children at risk and in contact with other programs can be offered this level of support.

Some aspects of the framework could be operational within existing resources:

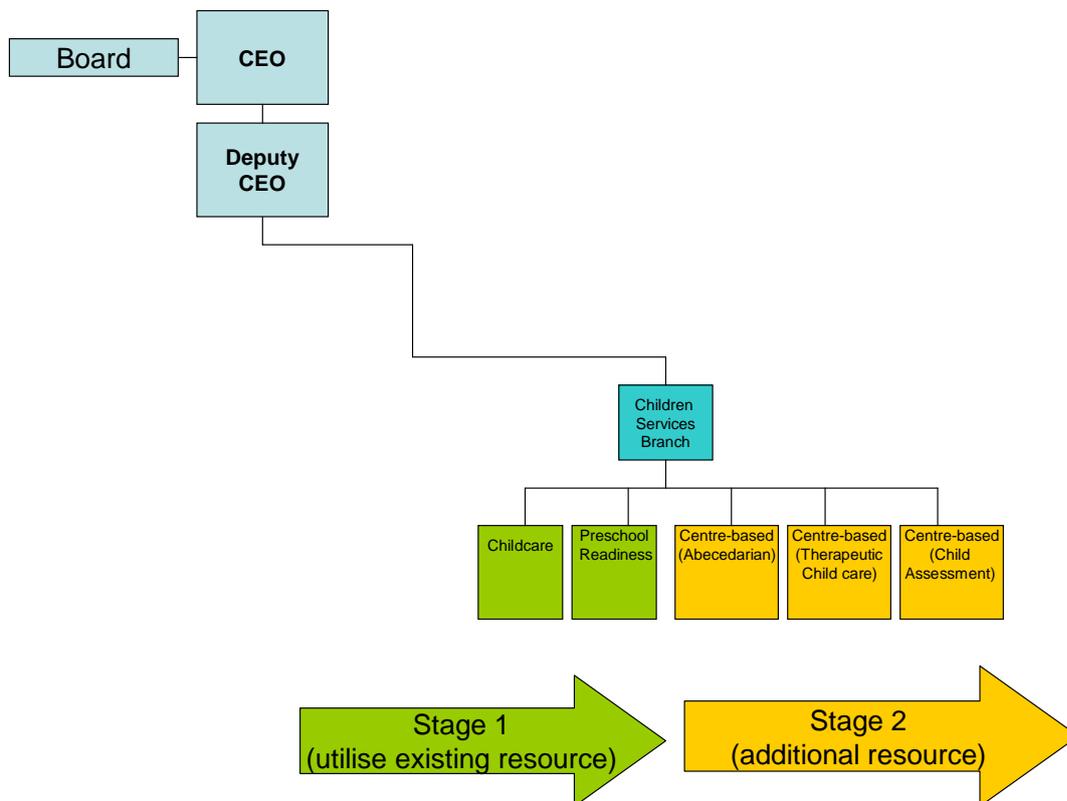
Therapeutic and assessment services could be offered through the child care centre to children engaged with Targeted Family Support Services, Intensive Family Support Services, Child Health Outreach Program, and also the Preschool Readiness program. Identified children could receive targeted therapy that addressed problems of regulation and developmental delay. These are problems that are commonly observed for young children especially in these programs and would add a significant referral option. This could take place within the short term and use resources that are currently available and would maintain the fidelity of their funding sources. This would involve the clinical psychologist role being more closely aligned to the current child care centre and this would increase the efficiency with which child focused interventions could be provided. This would also increase the capacity for this position to generate Medicare revenue. This would support current moves underway to make 15 places available in child care for intensive support.

Aboriginal child care workers undertake training in Child Centred Play Therapy and Child and Parent Play therapy (filial therapy). This would make a new defined and skill based role for Aboriginal staff. This could take place within the short term with training pathway and supervision for this already available within current resources.

Abecedarian learning games are implemented and support engaged from Joseph Sparling to develop this within the centre (these learning games are already endorsed by SNAICC – and will likely be filtering into various child care centres and especially after this years SNAICC conference). This could happen in the short term with several of the Abecedarian learning games already being implemented in the Preschool Readiness Program.

Conduct developmental screening on children aged zero to five. This would support assessment and review of all children at risk accessing all child programs who are aged between zero and five. This could take place within the short term with Clinical Masters students scheduled for placements in June.

Figure: Revised internal structure to support framework



Outlined above is a proposed twostep process that would support the consolidation of current resources and the development of programs identified through *'Rebuilding Family Life in Alice Springs and Central Australia: the social and community dimensions of change for our people'* with the addition of therapeutic services as identified through this proposal.

A major aspect of this structure involves the consolidation of service focussed exclusively on children aged between zero and five. The second important aspect is the role of branch manager to coordinate the accessing of services to other programs AND the expansion of programs identified in part 3 of this document.

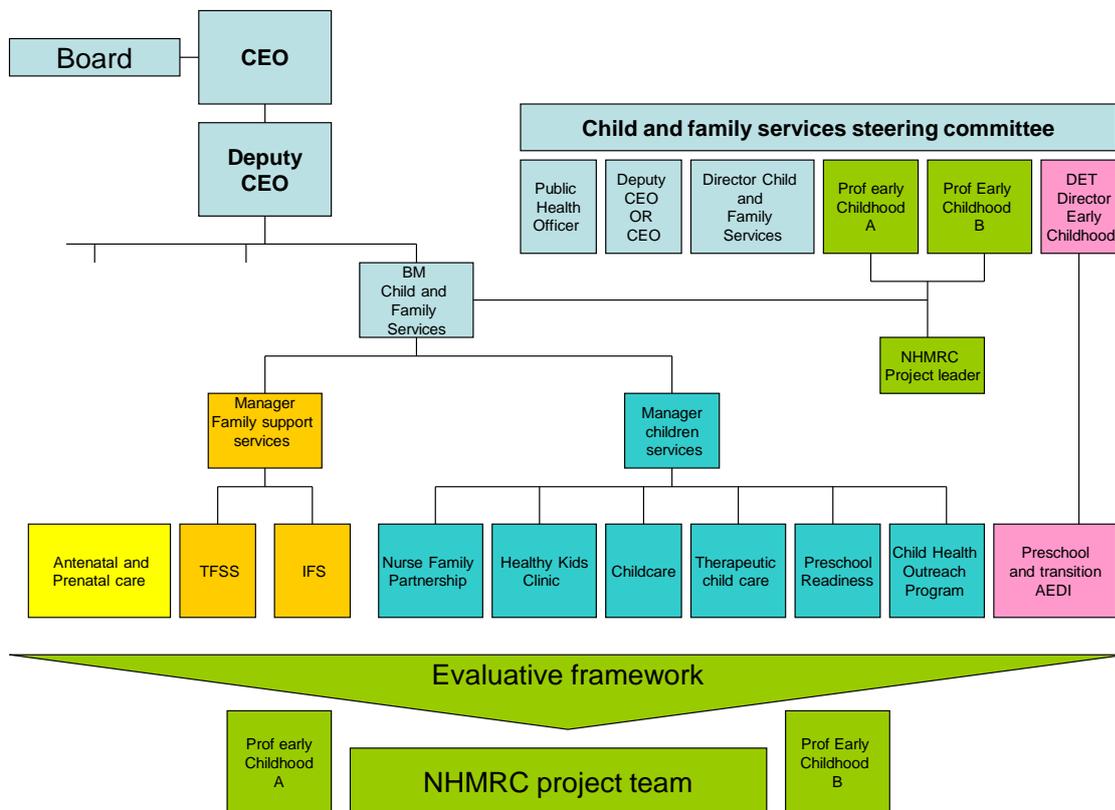
Stage 1

This involves the establishment of a child services branch that would proceed following a consultation process and detailed implementation strategy.

Stage 2

This involves the submission for additional funds as outlined in Part 3 below

Possible future vision



Outlined above is a theoretical model that could be expanded to include a larger number of programs integrated under a child and family service branch. A child and family services steering committee would provide the resources for the model to be implemented. Managers of child and family services would ensure the implementation of program and that they sustained the strategic focus (including assessment, intervention, review and evaluation). Branch manager child and family services will work in collaboration with executive leadership to ensure programs are continually aligned to population issues and will support managers to provide up to date information on program inputs and outcomes. This position could work in collaboration with a research team to utilise this data in a way that keeps the advisory committee and executive management updated as to the improvements being made at a population level. This represents a longer term approach and would rely on successful funding submissions and an operational integrated framework.

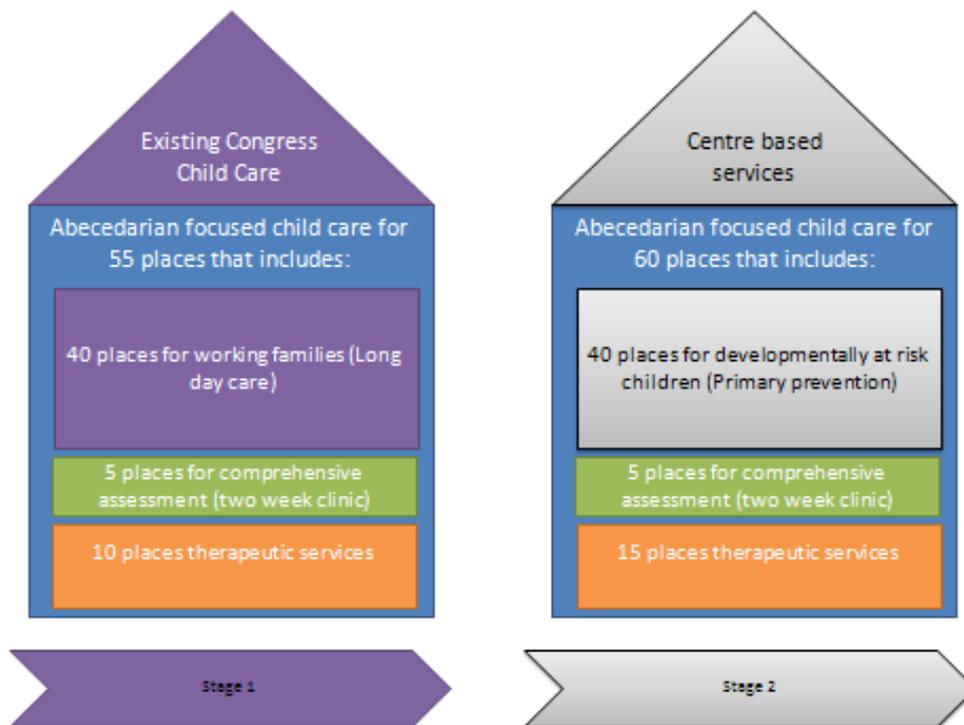
Part 3: The need for a Centre-based approach

Overview

A Centre-based approach is a crucial element of a successfully integrated model. As well as providing preventative (primary) and intervention (secondary) services, this will add value to all other child focussed programs. This section outlines implementation of an educational day care centre based on the Abecedarian model in addition to an intensive intervention unit. A focus on comprehensive child assessment will support both preventative and intervention streams of the centre while also providing support to children identified for assessment who are accessing other programs. This section builds on Parts One and Two, and outlines the engineering of a centre based approach. The three related, yet distinct functions the Centres include:

- **Comprehensive developmental assessment:** This will be important for establishing treatment plans for children with identified concerns and also in maintaining normal development for children at risk. Children aged between 0 and 5 who are actively engaged in an ongoing support program from Congress will also be able to be referred in for assessment (This would include Child Health Outreach Program, Intensive Family Support Services, Targeted Family Support Services and Preschool Readiness).
- **Preventative Program (Abecedarian):** The Abecedarian model of educational day will be the major aspect of the centre and will provide stimulation required for healthy development of children at risk.
- **Early Intervention (Infant and toddler clinic):** A clinical services and brief intervention model will target children with developmental delays and or social, emotional and behavioural difficulties. Children who require intensive interventions of longer duration will enrol in the abecedarian modelled day care and continue to receive therapeutic care – thus creating a *Therapeutic Child Care stream* within the centre.

Centre Based Approach



Comprehensive developmental assessment (early identification)

Purpose

All children aged zero to five will have access to comprehensive assessment of developmental, social, emotional behavioural wellbeing and attachment relationships. This will be important for identifying children who require additional support, the type of support they require, and providing a baseline level from which to plan interventions and evaluative outcomes.

This will provide support to children accessing centre based intervention as well as children engaged with other Congress programs. While there are many approaches to improving outcomes for children (centre based Vs. home visitation, family support Vs. child focussed) a common theme is healthy growth and development and this assessment unit will be able to support the monitoring and targeting of interventions for children who have identified problems or risk that impact on healthy growth and development. This will be crucial in supporting the integration of programs, that an overarching evaluative framework and consistent approach to goal setting.

For *preventative programs* this will provide a baseline level to assess sustained positive growth. For instance, children engaged in The Family Nurse Partnership Program could be referred for developmental screening and this reviewed to ensure sustained health growth is occurring. All children engaged in the Abecedarian educational day care will also receive ongoing developmental screening to ensure healthy cognitive development.

The capacity to provide comprehensive developmental assessments will also support treatment planning for all children aged zero to five who may be accessing other child services programs which could be experiencing major problems. For instance, a child engaged with support from family services such as Intensive Family Support, could be referred for comprehensive developmental that would provide baseline level of functioning and provide clear areas of concern with recommendations and intervention outcomes. This may lead to centre-based interventions or family support approaches. In this instance, this clinically information would add value to family needs assessments undertaken and support discussion and care planning.

Operational detail

Children will be enrolled in the centre for a brief period (one to two weeks) to enable comprehensive evaluation to take place. Reports will include evaluation of child cognitive and psychological wellbeing through observation and direct assessment. Where possible this will also include observation of children with their carers. Reports will also include assessment information obtained through the Child Health Check. This information will

provide the focus for treatment planning and review and enable a holistic care plan to be developed.

Major outcomes

For children with identified concerns

- Completed comprehensive assessments and reports that:
 - o Outline of developmental and psychological concerns with recommendations
 - o Identify specific goals that support treatment review
- Work with the early intervention team to develop holistic treatment care plan (this may involve referral to other services within or external to Congress)
- Where children are engaged with other services already, liaise with program staff to develop intervention plans.
- Complete comprehensive follow up examinations to:
 - o Report on the effectiveness of intervention
 - o Make recommendations for any ongoing additional support
- Provide strategic support and supervision where appropriate to therapeutic team

For children enrolled in preventative programs (including Abecedarian and ANFP)

- Provide regular developmental screening
- Provide reports on trajectories of development for children in ongoing programs
- Where problems are identified follow process as above (problems will be identified by delay at any one point in time, or delayed growth as indicated by successive points in time with no measurable change).

Capacity for service delivery (projected outputs)

Based on resources outlined above there would be a maximum scope for 184 children per year to receive comprehensive developmental assessment. This is based on 8 children per fortnight and is based on a 46 week year. If this number was 150 per year, this would still provide scope for 20 percent all children aged zero to five (approx. 750) to access this level of assessment. Given the large number of children aged between zero and five accessing programs it is likely this unit would be highly utilised.

Resources needed and cost estimates first year

Resource	Function	Cost per year
Clinical Psychologist (child focussed)	Conduct assessments and operations related to comprehensive assessment.	\$116,386 (+ \$29,096 on costs)
Therapy assistant (this would be an identified Aboriginal family support worker position who would undertake on the job training and external training to support assessment).	Support with assessment process including observation, family engagement and administration of assessment were identified.	\$59,199 (+ \$14,799 on costs)
Recruitment fee	Advertisement for positions	\$5,000
Vehicle	One people mover to transport families to and from centre for assessment.	\$13,380
Vehicle running costs	Insurance and fuel	\$4,000
Assessment library: Eg Bayley Scale of infant and toddler development, Peabody, Video recording equipment and play back equipment	Required for developmental assessment and reporting.	\$25,000 (once off),
Assessment room	Required for conducting assessments both standardised and play based	\$6,000
Office supplies	Desk / chairs X2	\$5,000
Electronic devices	Mobile phone / Computer X2	\$10,000
Perishables	Assessment forms, paper, other assessment materials	\$5,000

Meeting room / admin room	Will be used for family meetings and will house work stations for Child Psychologist and Aboriginal Therapy Assistant	\$6,000
Training	Travel / course / accommodation	\$10,000
Program evaluation after 18months		\$50,000
	Sub total	\$314,965
Admin fee (20%)	20 per cent	\$62,993
	TOTAL	377,958

Implementation

The assessment focus could be online before therapeutic care or abecedarian models of interventions were provided. This could happen quickly with Congress already possessing much of capacity to support this operation (albeit on a smaller scale). Assessment plans in the first phase would focus on developmental assessment and comprehensive report generation for Congress clients currently aged between zero and five. This unit could initially utilise the existing Congress Child Care Centre and an available room for one-to-one assessments.

Abecedarian Educational Day Care (primary prevention)

Purpose

For many children a major limiting factor to healthy growth is simply a lack of stimulation. Access to educational day care will be the focus of support with the centre able to take a preventative focus on maintaining normal growth for children at risk of developmental failure. Implementation of the Abecedarian model means developmentally vulnerable children will be able to access the level of cognitive stimulation required through the early years. An overview of the research that supports and Abecedarian model has been outlined above in Part Two. This section provides the specific details of what is involved in the implementation of the model.

Operational details

The model will replicate the details of centres which have implemented the abecedarian model. Specifically this will involve:

- Children start in infancy and attend until they are old enough to attend public preschool.
- The centre is staffed with a teacher: child ratio ranging from 1:3 for infants and toddlers to 1:6 for older children.
- The centre operates up to 10 hrs a day (7:30am-5:30pm), 5 days per week and 50 weeks a year.
- Home visitation will occur once per week and will be focussed on involving parents in activities similar to those used at the centre.
- Transport to and from the centre is provided.
- All meals and snacks are provided during centre hours
- There are four main elements to an Abecedarian approach, all involving adult-child interactions

Four main elements to Abecedarian Approach:

- **Learning Games** - games based on developmental theory that target cognitive, social, linguistic and motor skills with adult-child interaction being a focal point (4) Teachers daily engage in short interactive sessions (adult/child interaction games) with individual children or very small groups (e.g., 2 children).

- **Conversational reading** – emphasises back and forth communication. Teachers use a 3S strategy (See, Show, Say) to read a book individually every day to every child. See = input, Show = Comprehension, Say = Output / Production.
- **Enriched care giving** - daily intentional teaching throughout all routines *Teachers encourage children to practice skills (e.g., cooperating, listening, counting, colour recognition) during care routines*
- **Language priority** - aim to make every experience language rich Teachers use a 3N strategy to surround spontaneous events with adult language.

Major outcomes

- Children identified as developmentally vulnerable will maintain normal development as measured by standard scores on developmental screening tools and population based assessment tools (this will be supported through the assessment unit and also linkage to population based data such as the AEDI, and NAPLAN).
- Children will have school readiness skills that will enable effective engagement and success in preschool.
- Children will experience gains acquired that will be sustained across the lifespan and will be evidenced by significantly higher levels of educational attainment, employment and health.

Capacity for service delivery (projected outputs)

A centre could provide space for 60 children to experience full Abecedarian day care. This would be inclusive of 5 children at any one time who were undergoing comprehensive development assessment and 15 children who would be involved in intensive but brief interventions. There would be 40 places for children for the purpose of providing sustained stimulation.

Resourced needed

Resource	Function	Cost per year
Centre Manager	Oversee daily operations of centre Maintain integrity of the abecedarian model and staff training requirements.	\$91,000 (+ \$22,750 on costs)
Early Childhood Educators (4 positions) Will be qualified early childhood educators (ie minimum qualification teaching degree)	Provide support to child care staff in modelling and implementing Learning Games, Conversational Reading, Enriched Child Care and Reading Priority. These positions would involve a focus on child interactions and education of other staff. These staff would be important to support building and up skilling other staff in the centre.	\$80,000 (+ \$20,000 on costs) X 4 (\$400,000)
Child Support Workers 14 Positions will provide high quality educational day. Staff will have experience and or qualifications needed to provide enriched educational day care environment.	Provide support in implementing Learning Games, Conversational Reading, Enriched Child Care and Reading Priority. These positions would involve a focus on child interactions. These positions are required to maintain a ratio outlined in the Abecedarian model of 1:4.	\$59,199 (+ \$14799 on costs) X 14 (\$1,035,973)
Recruitment fee	Advertisement for positions – will take several rounds to full staff	\$10,000
Cook	Provide all meals and snacks for children	\$55,000 (+ \$13,750 on costs) X1
Fit out for kitchen	All non-infrastructure needs of kitchen including cutlery, utensils, pots, other cooking requirements.	\$15,000
Nutritional consultancy	Provide strategic input on planning of	\$5,000 (once

	meals for children	off)
Van (3)	Transport children to and from child care centre. The mini bus can transport 12 children at once and it will take 30 to 45 minutes to collect 12 children.	\$46,008 (\$15,336 each per year)
Staff vehicle (3)	Used by team staff for home visitation	\$19,692 (\$6,564 each)
Vehicle running costs	Fuel and insurance (\$4,000 each cars, \$5, 000 each vans)	\$27,000
Other materials	Play equipment and other perishables	\$200,000 (start up) (\$20,000 per year after)
Food	Based on \$10 a per day per child, five days a week, 50 weeks per year	\$150,000
Training		\$90,000
Building	(Centre Lease) per year	\$180,000
Building fit out	to cover expense of refurbishing building to be compliant with centre needs	\$200,000 (once off)
Evaluation of program at 18 months		\$120,000
Sub total		2,681,173
Admin fee (20%)		\$536,234
TOTAL		\$3,217,407

Centre-based therapeutic service (Secondary prevention)

Purpose

The **therapeutic service unit** will implement care plans developed through comprehensive assessments undertaken. This will add significant value to the centre by providing therapeutic services to infants and toddlers who have significant developmental problems. Interventions are intended to be of an intensity and duration significant enough to enable children to engage and participate positively in early educational experiences without additional support.

Targeted therapeutic services will be available to children and also to their parents/carers where possible. Possessing the flexibility to engage children individually or with guardians is an important aspect of this model.

Review of treatment outcomes will be provided by the **assessment unit** and this will inform evaluation of treatment outcomes and also future planning. The therapeutic unit will focus on intensive 10 week intervention modules. The effects sizes of this intervention are expected to be significant with daily contact across the ten weeks period.

Operational Detail

Evidence based therapeutic services will include:

Child and Parent Relationship Therapy (filial therapy) will be provided where children and parents can participate in positive and engaging relationships. This model of intervention will be provided by trained identified Aboriginal staff working under the supervision of clinical child psychologists.

Child Centred Play Therapy will be provided where children do not have parent or guardians available to engage in child and parent relationship therapy. This may include children in care and or children with parents who have a restricted capacity to engage in therapy services.

Psycho-educational advice for parents on range of developmental issues.

Circle of Security will be a focus of training and discussion with staff and parents around interactions with emotionally vulnerable children

Targeted remedial activity and health interventions: This will include any specific activity needed that may be a limiting factor in growth and development. This may involve remediation for language delay and physical health (ie regular ear mopping, medication, and prescribed physical activity).

These interventions are identified based on

- a) capacity to cover both child, parent and both child/parent approaches
- b) are evidence based
- c) are inclusive of recent developments in the neurobiology of complex trauma
- d) are identified based on a knowledge of issues that are known to impact on children aged zero to five in Alice Springs and Central Australia.
- e) are able to implemented by locally trained to perform specific components of these interventions under appropriate supervision

Identification of treatment plans will be supported through Assessment unit and therapeutic team.

Resources to implement

Resource	Function	Cost per year
Clinical Psychologist X 1	Provide interventions for children as indicated in the care plan. This will involve evidence based play therapies and attachment based therapies. Provide supervision for therapy assistants in the provision the therapeutic services.	\$116,386 X1 (+ \$29,096 on costs)
Paediatric social worker X1 (or child nurse)	Would work as part of the Intensive Intervention to coordinate and implement care plans.	\$91,000 (+ \$22,750 on cost)
Therapy assistant (infant and toddler mental health workers) (Aboriginal identified - similar model to Aboriginal Health worker positions)	Provide interventions support where identified	\$59,199 (+ \$9,471 on costs)
Consult room X2	Provide therapy services	6,000 each X2
Vehicle	One people mover to transport families	\$13,380

	to and from centre for assessment.	
Vehicle costs	Insurance, fuel	\$4,000
Recruitment fee	Advertisement for positions	\$5,000
Office supplies	Desk / chairs X3	\$6,000
Electronic devices	Mobile phone / Computer X3	\$15,000
Perishables	Assessment forms, paper, other assessment materials	\$5,000
Evaluation after 18 months		\$40,000
Training		\$10,000
Sub Total		\$438,282
Admin fee (20%)		\$87,656
TOTAL		\$525,938

Implementation strategy

Below is an outline of the key milestones that will contribute to the establishment of a fully functional Centre Based approach to support developmentally vulnerable children aged zero to five.

- **Comprehensive developmental assessment (\$952,716 over three years)**
 - o Children will receive comprehensive developmental assessment to *identify remediation* plans where identified and *monitor development* for children at risk, and *assess change for children targeted* for therapeutic support (this will support both primary and secondary prevention services).
- **Therapeutic services (\$1,475,000 over three years)**
 - o Children will have access to remediation services where there are identified problems. These may include but are not limited to cognitive, social, emotional, behavioural and physical problems (secondary prevention).
- **Abecedarian educational day care (\$6,944,493 over three years)**
 - o Provide enriched educational day care for children at risk and also for children accessing therapeutic services.
- **Project management (\$450,000 over three years)**
 - o Full time employed project manager for the first 18 months to support procurement of resources and lease of building

These three functions will be initially implemented through Congress' Child Care Centre in Stage 1 ('start up'). This process will enable the development of a platform that will support the successful roll out of these approaches that will require additional funding. **The start-up phase is crucial in being able to rapidly and effectively implement larger changes.**

Period	Comprehensive Developmental assessment	Therapeutic services	Abecedarian Educational day care	Project management	Total
April – June 2013	Within existing resources				Nil
June 2013- June 2014	\$316,800	\$490,000	\$1,445,679	\$150,000	\$2,402,479
July 2014 – June 2015	\$347,958	\$505,000	\$2,941,407	\$150,000	\$3,944,365
July 2015 – June 2016	\$287,958	\$480,000	\$2,557,407	\$150,000	\$3,475,365
Total over 3 years	\$952,716	\$1,475,000	\$6,944,493	\$450,000	\$9,822,209

Phase 1: Utilization of existing resources

Present through to June 30 2013

Timeline	Comprehensive developmental assessment	Therapeutic child care	Abecedarian learning center
Main objectives	Assessment battery developed to enable consistent care plans across programs. Baseline and outcome begin to be loaded into the overarching evaluative framework.	Establish treatment plans / develop and evaluate a model of therapeutic care based on 'childhaven' model.	Introduction of Abecedarian learning games to existing centre.
Major expenses in this period	Nil (within existing)	Nil (within existing)	Nil (within existing)
April	Assessment battery is developed by child psych. 4 comprehensive assessments reports are completed.	15 Children identified for intensive intervention	First staff PD in Abecedarian learning games begin for child care staff + Weekly supervision
May	Reports reviewed and 2 comprehensive assessment reports are created.	Targeted Therapeutic services model Piloted	Two staff PD in Abecedarian learning games + weekly supervision
June	Reports reviewed and 2 comprehensive assessment reports are created.	Targeted Therapeutic services model Piloted (cont.)	Two staff PD in Abecedarian learning games + weekly supervision
Outcomes end period	Comprehensive developmental assessments completed and used to develop intervention plans for children. from TFSS / IFS / CHOP / and support those in Therapeutic child care	Wrapped therapeutic services are provided to children currently engaged in Child care of other CAAC programs and outcomes are evaluated.	5 formal training sessions completed Established training plans for staff 5 staff with basic skills of learning games All children enrolled experience learning games on a daily basis

Phase 2a: First Funding

June 30th 2013 through June 30th 2014

Timeline	Comprehensive developmental assessment	Therapeutic child care	Abecedarian learning centre
Main objectives by end of year	All children engaged with CAAC programs will undergo comprehensive developmental screening by Clinical psych and Aboriginal Family Support worker	Formalized model of therapeutic childcare implemented based on outcomes from pilot.	Physical structure is identified Centre is operating at 60 percent capacity. Abecedarian model expanded in existing child care.
Major expenses in period	Registered Psych Aboriginal Family Support position (therapy assistant)	Clinic /registered psych Aboriginal Family Support Position Paediatric Social worker or Nurse	Project management / Admin assistance Lease of building
July	Positions advertised Resources procured	Positions advertised Resources procured	Project manager advertised Building procurement process undertaken
August	Positions filled Cars arrive Resources Received	Positions filled Cars arrive Resources Received	Project manager position filled Formalized training of staff at existing childcare (building capacity to staff Centre)
Sept			
Oct	Staff inductions	Staff inductions	
Nov	Team fully operational	Team fully operational	
Dec	Continues to operate as per service agreement	Continues to operate as per service agreement	Child Care Staff advertised

Jan	Continues to operate as per service agreement	Continues to operate as per service agreement	5 positions filled
Feb	Continues to operate as per service agreement	Continues to operate as per service agreement	Centre opens initially at one third capacity (20 places)
March	Continues to operate as per service agreement	Continues to operate as per service agreement	Additional 5 children enrolments
April	Continues to operate as per service agreement	Continues to operate as per service agreement	Additional 5 children enrolments
May	Continues to operate as per service agreement	Continues to operate as per service agreement	Child care staff advertised
June	Continues to operate as per service agreement	Continues to operate as per service agreement	At 2/3 capacity

Phase 2b: Second funding received

June 30th 2014 through June 30th 2015

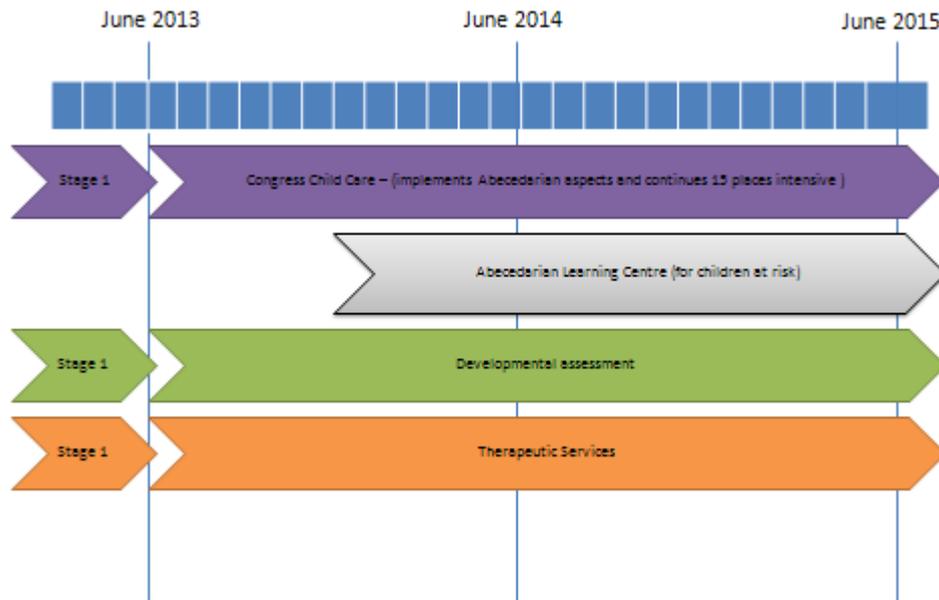
Timeline	Comprehensive developmental assessment	Therapeutic child care	Abecedarian learning center
Main objectives	Continues to operate as per service agreement	Continues to operate as per service agreement	Fully operational at end of this period with 60 children enrolled
Major expenses in period	At full operation ongoing costs as per budget Evaluation	At full operation ongoing costs as per budget Evaluation	At full operation ongoing costs as per budget Evaluation
	Continues to operate as per service agreement	Continues to operate as per service agreement	
July	Continues to operate as per service agreement	Continues to operate as per service agreement	Sustain successfully 2/3 capacity
August	Continues to operate as per service agreement	Continues to operate as per service agreement	Evaluation completed on children who have attended for 6 months
Sept	Continues to operate as per service agreement	Continues to operate as per service agreement	Additional Enrolments
Oct	Continues to operate as per service agreement	Continues to operate as per service agreement	Additional Enrolments
Nov	Continues to operate as per service agreement	Continues to operate as per service agreement	Fully staffed and at capacity
Dec	Continues to operate as per service agreement	Continues to operate as per service agreement	
Jan	Continues to operate as per service agreement	Continues to operate as per service agreement	
Feb	Continues to operate as per service agreement	Continues to operate as per service agreement	
March	Continues to operate as per service agreement	Continues to operate as per service agreement	
April	Continues to operate as per service agreement	Continues to operate as per service agreement	

May	Continues to operate as per service agreement	Continues to operate as per service agreement	
June	Continues to operate as per service agreement	Continues to operate as per service agreement	

Structure and function of Congress Child Focused Centres



Timeline



Summary

The strategic integration of Congress's early childhood programs creates great scope to minimise the extent to which poverty and disadvantage shape life-long outcomes for vulnerable children. The proposal outlined above represents a progression that is based on a solid platform of operational success in the area of childhood. The addition to existing services of a centre-based approach with a focus on primary and secondary support for young children and their families enables the opportunity to alter what is known to be a negative developmental trajectory underway well before the age of five for many children living in Central Australia.

With this approach coordinated through a comprehensive primary health organisation, there will be safe developmental passage for children as they pass through the most impressionable and vulnerable phase of their lives. This approach offer great promise in ensuring that children and their families have access to services that support growth into health adults.

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Title	Author	Journal	Abstract/Summary
1 Environmental Risk Factors in Infancy	Arnold J Sameroff	Pediatrics, 1998, vol. 102, no. 5 pp. 1287 - 1292	Environment plays an important role in shaping development from the newborn period through adolescence. Many individual environmental risk factors may impinge on development (poverty, mental illness, minority status, and many others), but the most detrimental effects are caused when multiple risk factors act on a single infant. Important reference for effect of environmental risk factors on development.
2 A twelve-year follow-up study of maltreated and at-risk children who received early therapeutic child care	Elizabeth Moore, Gay Armsden, Patrick L Gogerty	Child Maltreatment, 1998, 3: 3	This study is a 12 year follow up investigation of a randomised controlled clinical trial of a therapeutic child care program for maltreated or at-risk infants and toddlers. Randomised to either an ecological model therapeutic child care program (TX) or standard community services (CX). 35 were evaluated in early adolescence. CX youths displayed significantly more behaviour problems according to caregivers, earlier arrest and more frequent violent delinquency, and increasing school disciplinary problems. TX families demonstrated significantly more positive home environments and caregiver-child relationships. The findings attest to the long-term value of early intervention for maltreated children.
3 Neurocognitive correlates of socioeconomic status in kindergarten children	Kimberly G Noble, M. Frank Norman and Martha J. Farah	Developmental Science 8:1 (2005) pp. 74-87	In this study we assessed neurocognitive functioning of kindergarteners from different SES backgrounds using tasks drawn from the cognitive neurosciences literature in order to determine how childhood SES predicts the normal variance in performance across different neurocognitive systems. SES was disproportionately associated with the left perisylvian/language system and the

			prefrontal/executive systems, with low SES children performing worse than middle SES children on most measures of these systems.
4 Early learning and school readiness: Can early intervention make a difference?	Ramey, Craig T. Ramey, Sharon L.	Merill-Palmer Quarterly, Volume 50, Number 4, October 2004, PP. 471-491.	This article reviews evidence from RCTs that were designed to test the hypothesis that preschool education, with an emphasis on seven particular classes of experiences, could be efficacious in improving readiness for school and subsequent academic achievement in reading and mathematics. Results indicate that the cumulative developmental toll that is measured reliably in high-risk samples of children beginning in the second year of life can be substantially reduced through a high quality preschool program.
5 Early experience alters brain function and structure	Heidelise Als, Frank H. Duffy, Gloria B. McAnulty, Michael J. Rivkin, Sridhar Vajapeyam, Robert V. Mulkern, Simon K. Warfield, Petra S. Huppi, Samantha C. Butler, Nikk Conneman, Christine Fischer, Eric C Eichenwald	Pediatrics vol. 113, no. 4 April 2004.	Aim to investigate the effects of early experience on brain function and structure. Indicates that the quality of experience before term may influence brain development significantly.
6 Pathways of long-term effects of an early intervention program on educational attainment: Findings	Suh-Ruu Ou	Applied Developmental Psychology 26 (2005) 578-611	Followed up links between participation in early intervention programs and later educational attainment. Relationship between intervention and subsequent educational attainment was best predicted by cognitive advantage effects, followed by

from the Chicago longitudinal study			family support and school support effects. The findings indicated that environmental factors such as family and school, as well as personal characteristics that may be affected by the intervention play important roles in predicting educational outcomes.
7 Which Children Benefit the most from early intervention?	Craig T. Ramey, Sharon Landesman Ramey	Pediatrics, 1994, vol. 94, no. 6, pp. 1064 - 1066	Reviews findings that certain children and families benefit much more than do others from early educational interventions. Early educational intervention can substantially improve children's intellectual performance and academic achievement. Maternal intelligence is a key factor in children's intellectual development, especially when these children are not provided with intensive early intervention.
8 Adult outcomes as a function of an early childhood educational program: An Abecedarian project follow up	Frances A. Campbell; Elizabeth P. Pungello; Margaret Burchinal; Kirsten Kainz; Yi Pan; Barbara H. Wasik; Oscar A Barbarin, Joseph J. Sparling; Craig T. Ramey	Developmental Psychology, 2012, vol. 48, no. 4 p. 1033 Advance online publication. Doi: 10.1037/a0026644	Adult (age 30) educational, economic and social-emotional adjustment outcomes were investigated for participants in the Abecedarian Project, n = 101. Treated individuals attained significantly more years of education, but income-to-needs ratios and criminal involvement did not vary significantly as a function of early treatment. Overall, the findings provide strong evidence for educational benefits, mixed evidence for economic benefits, and little evidence for treatment-related social adjustment outcomes.
9 Family and social risk, and parental investments during the early childhood years as predictors of low-income children's school readiness outcomes	Rashmita S. Mistry; Aprile D. Benner; Jeremy C. Biesanz; Shaunna L. Clark; Carollee Howes.	Early Childhood Research Quarterly 25 (2010) 432-449	Examined relations among cumulative family and social risk, assessed during infancy and the preschool years, and children's prekindergarten achievement, self-regulatory skills, and problematic social behaviour, testing if these associations were mediated through two sets of family processes – responsive parenting practices and the provision of language stimulation and literacy practices. Risk exposure during infancy was observed to be most detrimental

			for children’s school readiness skills and was partially mediated by risk exposure during the preschool years and family processes, assessed during toddlerhood and the preschool years.
10 A population approach to early childhood services: Implementation for outcomes	Northern Territory Government	Early Childhood Series No. 3 2011	
11 Nutritional supplementation, psychosocial stimulation, and mental development of stunted children: the Jamaican Study	Grantham-McGregor, S.M. Powell, C.A.	Lancet 1991, vol. 338, issue 8758, p1.	Compared stimulation, supplementation, combined and control groups. Stimulation and supplementation had significant independent beneficial effects on the children’s development. The treatment effects were additive, and combined interventions were significantly more effective than either alone. These findings suggest that poor mental development in stunted children is at least partly attributable to under nutrition.
12 Early Childhood intervention and educational attainment: age 22 findings from the Chicago Longitudinal Study	Suh-Ruu Ou, Arthur J Reynolds	Journal of Education for Students Placed at Risk, 11(2), 175-198	Investigated whether participation in CPC Preschool program was associated with higher educational attainment at age 22. CPC preschool participation was significantly associated with more years of education, a higher rate of high school completion and a higher rate of college attendance. Findings demonstrate that large scale school-based programs can have enduring effects into early adulthood.
13 Persistent Effects of Early Childhood Education on high-risk children and their mothers	Craig T. Ramey; Frances A. Campbell; Margaret Burchinal; Martie L. Skinner; David M. Gardner;	Applied Developmental Science 2000, vol. 4 no. 1 pp. 2-14	4 conditions – control, preschool + k-2 support, preschool only and k-2 support only. Positive and systematic cognitive and academic achievement differences were found for children in the preschool treatment conditions, especially when combined with

	Sharon L. Ramey		the k-2 support.
14 The Brookline Early Education Project: A 25-year follow-up study of family-centred early health and development intervention.	Judith S. Palfrey,; Penny Hauser-Cram; Martha B. Bronson; Marji Erickson Warfield; Selcuk Sirin; Eugenia Chan	Pediatrics vol. 116 No. 1 July 2005	Focused on health-related outcomes of early education programs. BEEP participants living in urban communities had advantages over their peers in educational attainment, income, health, and well-being. The long-term benefits revealed in this study are consistent with the findings of previous long-term studies that indicated that participants in high-quality intervention programs are less likely to cost taxpayers money for health, educational and public assistance services.
15 Early Vocabulary Growth: Relation to Language Input and Gender	Janellen Huttenlocher, Wendy Haight, Anthony Bryk, Michael Seltzer, Thomas Lyons	Developmental Psychology 1991 vol. 27 no. 2 pp. 236-248.	Examined the role of exposure to speech in children's early vocabulary growth. Found a substantial relation between individual differences in vocabulary acquisition and variations in the amount that particular mothers speak to their children.
16 Effects of Early Intervention on Intellectual and Academic Achievement: A follow-up study of children from low-income families	Frances A. Campbell; Craig T. Ramey	Child Development, 1994, 65, 684-698	Follow up data 4-7 years post Carolina Abecedarian Project. Positive effects of preschool treatment on intellectual development and academic achievement were maintained through age 12. School-age treatment alone was less effective. Results generally supported an intensity hypothesis in that scores on cognitive and academic achievement measures increased as duration of treatment increased.

17 Young Adult Outcomes of the Abecedarian and CARE early childhood educational interventions	Frances A. Campbell; Barbara H. Wasik; Elizabeth Pungello; Margaret Burchinal; Oscar Barbarin; Kirsten Kainz; Joseph J. Sparling; Craig T. Ramey	Early Childhood Research Quarterly 23 (2008) 452-466.	Compared participants in CARE project to Abecedarian. Finding significant educational and vocational gains lasting into young adulthood in the CARE study reinforce Abecedarian young adult findings and strengthens the case for early childhood intervention for children from low-income families.
18 Comparative benefit-cost analysis of the Abecedarian program and its policy implications.	W.S. Barnett; Leonard N. Masse	Economics of education review 26 (2007) 113-125	Economic benefits of a combination of preschool and long day care together included increased maternal earnings, decreased k-12 schooling costs, increased lifetime earnings and decreased costs related to smoking.
19 Can Intervention Early Prevent Crime Later? The Abecedarian Project Compared with Other Programs	Steven H. Clarke; Frances A. Campbell.	Early Childhood Research Quarterly, 13, No. 2, 319-343.	The Abecedarian youth crime study considered whether the project affected adult crime of participants from age 16 to 21. Found no significant differences in the amount and type of arrests and of charges filed when comparing the groups.
20 Pioneering Child Care Program Proves its worth	Laura Sheehan	School of Education, Johns Hopkins University, 2001	Childhaven – therapeutic program for abused and neglected children. Those parents in the childhaven group were more positive, less abusive and treated their children much better. When children were revisited in their teenage years, only 3.7% had been arrested or were identified by caregivers as violent compared to 47.6% of control group. 3.75% compared to 23.8% had been arrested for serious or violent crimes. 29.4% compared to 54.5% showed prevalence of disciplinary referrals. 25% suffered from substance abused compared to 61.5% of control group.

21 The Impact of Adverse childhood experiences on health problems: evidence from four birth cohorts dating back to 1900	Dube, S.R., Felitti, V.J., Dong, M., Giles, W.H., & Anda, R. F. (2003).	Dube, S.R., Felitti, V.J., Dong, M., Giles, W.H., & Anda, R. F. (2003). The impact of adverse childhood experiences on health problems: Evidence from four birth cohorts dating back to 1900. <i>Preventive Medicine</i> , 37, 268-277.	“The more adverse experiences individuals reported having, the more likely they were to engage in risky health behaviours and to be diagnosed with disorders such as depression, alcoholism and substance abuse, heart disease, cancer, chronic pulmonary disease, obesity and diabetes among other things. These findings remind us that infant mental health has important implications for health as well as mental health outcomes”
22 Handbook of infant mental health page 7		Nelson, C. A., Zeanah, C. H., Fox, N. A., Marshall, P. J., Smyke, A. T., & Guthrie, D. (2007). Cognitive recovery in socially deprived young children: The Bucharest Early Intervention Project. <i>Science</i> , 318, 1937-1940.	“Nelson studied children removed from institutional care in the first 3 years of life and placed in foster families and reported increases in IQ. For children removed prior to 24 months the gains were substantial, but for those removed after 24 months, the gains were few.”
23 Handbook of infant mental health page 7			“Escalona (1967) anticipated this emphasis almost half a century ago when she noted that it is not the infant of environmental characteristics that matter so much : rather it’s the infants subjective experience of the world: indeed developmental psychopathology has demonstrated that stable individual differences lie initially in the infant carer relationship, only later becoming a characteristic of the individual child.
24 Early childhood development in the NT: Issues to be addressed			

25 Northern Territory Results for the Australian Early Development Index 2009	NT Government		
26 The value of investment in the early years: Balancing costs of childhood services	NT Government		
27 The first 5 years: Starting early	NT Government		
28 Children Now		http://www.childrennow.org/index.php/learn/early_learning_and_development/	Economic stuff regarding cost effectiveness of interventions (USA)
29 Adverse childhood experiences and personal alcohol abuse as an adult	Dube, SR, Anda, RF, Felitti, VJ, Edwards, VJ & Croft, JB	Addictive behaviours, 27 (2002) pp. 713-725.	Adult alcohol abuse has been linked to childhood abuse and family dysfunction. However, little information is available about the contribution of multiple adverse childhood experiences (ACEs) in combination with parental alcohol abuse, to the risk of later alcohol abuse. A questionnaire about childhood abuse, parental alcoholism and family dysfunction while growing up was completed by adult HMO members in order to retrospectively assess the independent relationship of eight ACEs to the risk of adult alcohol abuse. The number of ACEs was used in stratified logistic regression models

			to assess their impact on several adult alcohol problems in the presence or absence of parental Alcoholism. Each of the eight individual ACEs was associated with a higher risk alcohol abuse as an Adult. Compared to persons with no ACEs, the risk of heavy drinking, self-reported alcoholism, and marrying an alcoholic were increased twofold to fourfold by the presence of multiple ACEs, regardless Of parental alcoholism. Prevention of ACEs and treatment of persons affected by them may reduce the occurrence of adult alcohol problems.
30 Strategies to avoid the loss of developmental potential in more than 200 million children in the developing world	Engle, PL, Black, MM, Behrman, JR, Cabral de Mello, M, Gertler, PJ, Kaporiri, L, Martorell, R, Young, ME & the International Child Development Steering Group	Lancet, vol. 369, 2007	This paper is the third in the Child Development Series. The first paper showed that more than 200 million children under 5 years of age in developing countries do not reach their developmental potential. The second paper identified four well-documented risks: stunting, iodine deficiency, iron deficiency anaemia, and inadequate cognitive stimulation, plus four potential risks based on epidemiological evidence: maternal depression, violence exposure, environmental Contamination and malaria. This paper assesses strategies to promote child development and to prevent or ameliorate the loss of developmental potential. The most effective early child development programmes provide direct learning experiences to children and families, are targeted toward younger and disadvantaged children, are of longer duration, high quality, and high intensity, and are integrated with family support, health, nutrition, or educational systems and services. Despite convincing evidence, programme coverage is low. To achieve the Millennium Development Goals of

			Reducing poverty and ensuring primary school completion for both girls and boys, governments and civil society should consider expanding high quality, cost-effective early child development programmes.
31 Adverse Childhood experiences affect later life wellbeing	Waldman, HB, Perlman, SP & Cinotti, DA	EP Magazine Feb 2011	Review of relationship between ACE and adult risk factors.
32 Persistent effects of early childhood education on high-risk children and their mothers	Ramey, CT, Campbell, FA, Burchinal, M, Skinner, ML, Gardner, DM & Ramey, SL	Applied Developmental Science, 2000, vol. 4, no. 1, pp. 2-14.	Child and mother outcomes are reported for the Abecedarian project. Three randomized intervention conditions for at-risk participants were compared to a control condition. Positive and systematic cognitive and academic achievement differences were found for children in the preschool treatment conditions, particularly when that condition was combined with the K-2 Educational Support Program.
33 The prevention of intellectual impairment in children of impoverished families: findings of a randomized trial of educational day care	Martin, SL, Ramey, CT, Ramey, S	American Journal of Public Health, 1990, vol, 80, no. 7, pp. 844:847.	Estimated the effects of an educational day care program on the intellectual development of pre-schoolers from 86 high-risk families in a randomly allocated longitudinal study. At 6 through 54 months of age, the IQs of experimental program children ranged from 7.9 to 20.1 points higher than those of control children when maternal mental retardation and home environment effects were controlled.
34 Developmental potential in the first 5 years for children in developing countries	Grantham-McGregor, S, Cheung, YB, Cueto, S, Glewwe, P, Richter, L, Strupp, B & the International Child Development	Lancet, 2007, vol. 369, pp. 60-70.	

	Steering group		
35 Child development: Risk factors for adverse outcomes in developing countries	Walker, SP, Wachs, TD, Gardner, JM, Lozoff, B, Wasserman, GA, Pollitt, E, Carter, JA & the International Child Development Steering Group	Lancet, 2007, vol. 369, pp. 145-157.	
36 Strategies to avoid the loss of developmental potential in more than 200 million children in the developing world	Engle, PL, Black, MM, Behrman, JR, Cabral De Mello, M, Gertler, PJ, Kapiriri, L, Martorell, R, Young, ME & the International Child Development Steering Group	Lancet, 2007, vol. 369, pp. 229-242.	
37 The Abecedarian Approach	Sparling, J	Every Child, 2011, vol. 17, no. 1	Summary of Abecedarian
38 The impact of early intervention	Bracey, GW	Phi Delta Kappan, 1996, vol. 77, no. 7.	Looks at Abecedarian - evaluation

<p>39 The effect of an early education program on adult health: The Carolina Abecedarian project randomised controlled trial</p>	<p>Muennig, P, Robertson, D, Johnson, G, Campbell, F, Pungello, EP & Neidell, M</p>	<p>American Journal of Public Health, 2011, vol. 101, no. 3, pp. 512-516.</p>	<p>Examined the effects of ABC on health outcomes and behavioural risk factors when participants were aged 21 years. Relative to the control group, the ABC treatment group was previously found to have improved cognition and educational attainment. We found that the intervention also improved health ($p=0.05$) and health behaviours ($p=0.03$) when participants were aged 21 years. Conclusion: Effective early education programs may improve health and reduce risky health behaviours in adulthood.</p>
<p>40 The Development of cognitive and academic abilities: growth curves form an early childhood educational experiment</p>	<p>Campbell, FA, Pungello, EP, Miller-Johnson, S, Burchinal, M & Ramey, CT</p>	<p>Developmental Psychology, 2001, vol. 37, no. 2 pp. 231-242.</p>	<p>Cognitive test scores collected between the ages of 3 and 21 years and academic test scores from 8 to 21 years were analysed from original participants in the Abecedarian project. Treated children, on average, attained higher scores on both cognitive and academic tests, with moderate to large treatment effect sizes observed through age 21. Preschool cognitive gains accounted for a substantial portion of treatment differences in the development of reading and math skills. Intensive early childhood education can have long-lasting effects on cognitive and academic development.</p>
<p>41 Some Questions about the results of the abecedarian early intervention project cited by the APA task force on intelligence</p>	<p>Spitz, HH</p>	<p>American Psychologist, 1997.</p>	<p>Questions some of the results of the Abecedarian project</p>
<p>42 Early childhood education: young adult outcomes from the abecedarian project</p>	<p>Campbell, FA, Ramey, CT, Pungello, E, Sparling, J & Miller-Johnson, S</p>	<p>Applied developmental science, 2002, vol. 6, no. 1, pp. 42-57.</p>	<p>Followed up Abecedarian participants at 21 years of age. Statistically significant differences in the attainment of full economic independence were not found at this stage, but would not be expected among young adults still attending school. The incidence of</p>

			self-reported violence and law-breaking was not significantly reduced, although trends in the data favoured the treated group. The reported incidence of marijuana use was significantly less among treated individuals. The positive findings with respect to academic skills and increased years of post-secondary education support policies favouring early childhood programs for poor children.
43 Comparative benefit-cost analysis of the Abecedarian program and its policy implications	Barnett, WS & Masse, LN	Economics of Education Review, 2007, vol. 26, pp. 113-125.	Reviewed Abecedarian. Economic benefits include increased maternal earnings, decreased k-12 schooling costs, increased lifetime earnings and decreased costs related to smoking. Net present value is positive over a range of reasonable discount rates. Program benefits are compared to estimates from toehr studies with particular attention to a benefit-cost analysis of a half-day preschool program that did not provide child care. Returns to early childhood policy could be improved by greater attention to how programs might maximise education and child care benefits together regardless of the primary aim of the policy's agency sponsor.
44 Infant health and development program for low birth weight, premature infants: program elements, family participation, and child intelligence	Ramey, CT, Bryant, DM, Wasik, BH, Sparling, JJ, Fendt, KH & LaVange, LM	Pediatrics, 1992, vol. 3, pp. 454-465	
45 Long-term effects of Early childhood programs on cognitive and school outcomes	Barnett, WS	The future of children, 1995, vol. 5, no. 3, pp. 25 – 50.	Reviews 36 studies of early childhood programs to determine to what extent they produce long-term benefits in children's cognitive development, socialisation and school success.

46 The science of neglect: the persistent absence of responsive care disrupts the developing brain	National scientific council on the developing child	Center on the developing child, Harvard University, Working paper 12	
47 Jurisdictional, socioeconomic and gender inequalities in child health and development: analysis of a national census of 5-year-olds in Australia	Brinkman, SA, Gialamas, A, Rahman, A, Mittinty, MN, Gregory, TA, Silburn, S, Goldfeld, S, Zubrick, SR, Carr, V, Janus, M, Hertzman, C, Lynch, JW	BMJ, 2012; 2	
48 How the timing and quality of early experiences influence the development of brain architecture			
49 The basics of brain development			
50 Functional brain development in humans			

51 Brain development			
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