



A Pathway from Early Childhood Disadvantage for Australian Children

The Experience of the Western Australian
Challis School-Community Model of
Ensuring Children Growing up with
Disadvantage are not Left Behind



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“Virtually every aspect of early human development, from the brain’s evolving circuitry to the child’s capacity for empathy, is affected by the environments and experiences that are encountered in a cumulative fashion, beginning early in the prenatal period and extending throughout the early childhood”.

(Shonkoff and Phillips, 2000, p.6)





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Context

This project was initiated by the Minderoo Foundation and undertaken under contract by the Telethon Kids Institute. The project entailed detailed review of the Challis model and the evidence supporting it with the view to advocating its relevance for implementation in other vulnerable areas of Australia.

This project follows extensive work and collaboration in both developing and implementing the Challis model by a range of government and non-government agencies and groups over more than 5 years. The rapid and significant signs of the model's success in altering the life course of local children have encouraged stakeholders, including the Minderoo Foundation, to seek to share the findings and to suggest the policy relevance of the Challis model as a low-cost, evidence-supported Australian strategy for reducing long-term disadvantage and its associated social and economic costs.

In making the case, the project attempts to situate itself as reflecting a *next generation of knowledge* about ways in which Australian governments can effectively reduce entrenched disadvantage across the Nation, bringing together evidence from a spectrum of disciplines spanning brain science, organisational leadership, early childhood education, and service integration.

Method

This project was undertaken by the Telethon Kids Institute, an organisation with substantial long-term concern with, and expertise in, the area of developmental health and programs and policies to achieve better outcomes for Australian children. In carrying out the project, the Institute reviewed documentation on the Challis community model, critically analysed relevant academic literature, and examined trend data from the community.

Acknowledgements

This report has been prepared with the expert assistance and input of Professors Sven Silburn and Steve Zubrick from the Telethon Kids Institute and Ms Lee Musumeci¹.

¹ Principal of Challis Primary School (Year 3–7); former Principal of Challis Early Childhood Education Centre (K–2) incorporating the Challis Parenting and Early Learning Centre and key driver of the Challis model.



Terms used in this report

ABS refers to the Australian Bureau of Statistics

AEDI refers to the Australian Early Development Index
(now known as the Australian Early Development Census)

AEO is an Aboriginal Education Officer

Challis model refers to the suite of services delivered by the Challis Early Childhood Education Centre (ECEC) which includes Kindergarten up until the end of Grade 2 and the activities of the Challis Parenting and Early Learning Centre (PELC) from birth to Pre-Kindergarten

ECEC refers to Early Childhood Education Centre that coordinates the Challis model and delivers services that includes Kindergarten to Grade 2 and also provides services delivered by the Parenting and Early Learning Centre (PELC)

DOH is the Western Australian Department of Health

DCP is the Western Australian Department of Child Protection

DSC is the Western Australian Disability Services Commission

CACH is Child Adolescent Community Health within the Western Australian Department of Health

CALD refers to Culturally and Linguistically Diverse

PELC refers to the Challis Parenting and Early Learning Centre which is operated by the Challis Early Childhood Education Centre (ECEC)

PIPS refers to Performance Indicators in Primary School administered by UWA

Pre-K refers to services and programs to children immediately before kindergarten

UWA refers to University of Western Australia

WHO refers to World Health Organisation



The Challis model: Core Features

The Challis model (*Challis*) aims to mitigate the problem of significant early life disadvantage being a lifelong drag on the life chances of children. *Challis* is comprehensive, bringing together the elements of high quality early childhood education commencing before entry to preschool and extending throughout the early primary years, meshed parenting and early intervention programs to complement early learning and address barriers to child development, and family support and encouragement that provides consistent scaffolding children need to optimise progress.

While *Challis* is a comprehensive approach, its potency is that it is *low-cost*. Rather than attempting to solve problems of early disadvantage via heavily layered, costly sequencing of multi-agency ‘*top-up*’ interventions which can end with duplication, inefficiency and ‘*intervention fatigue*’ among families, it seeks a lighter more effective and efficient touch. It does this by targeting long-term, cumulative actions commencing soon after birth and extending through the primary years. This ‘lighter touch’ ensures more children start school ‘*ready to learn*’, where their subsequent educational pathways are supported by highly effective, efficient and systematically applied teaching methods. At the same time, children are supported by higher levels of parental engagement and commitment to education and by a community more focussed on achieving specific, ambitious end-point educational goals.

Experience to date of the *cost-to-benefit* profile of the *Challis* approach suggests the model does offer a ‘*next generation*’ method for Australian governments wanting to adopt more cost efficient and effective policies to address the social and economic drag associated with having children grow up in highly disadvantaged environments.



Key components of the model include:

- Single-point community-level accountability for outcomes (i.e. *local area steward leadership*);
- Delivery commencing immediately after birth and extending through the early primary years with service integration on a single local site (*supportive local developmental pathways and service continuity with sound linkages to all families*);
- Flexible approaches to meeting the needs of parents and children while also giving emphasis to specific, empirically-defined outcomes (*'loose-tight' service accountability*);
- A focus on ensuring needed services are reliably accessed by vulnerable children and families at the right time (*risk management approach*);
- Delivery of tailored 'doses' of human services (health, education, parenting support) of sufficient intensity and proximity to address needs (*cost-efficient and -effective use of available resources*);
- Delivery by highly trained and supported staff (*ensuring professional excellence*); and
- Working according to a common vision with specific medium- and long-term goals and according to a defined philosophy and pedagogy across the span of the early years (*consistency and fidelity of approach*).





The above-mentioned aspects fit within a simple proposition that lies at the heart of the Challis model, which is that over the long-run, most vulnerable children will do much better if they receive earlier-, better- and consistently-focussed education. This proposition reflects the reality that educational outcomes are a very good predictor of adult ‘success’ regardless of how this might be defined and that educational achievement is associated with greater wellbeing (Haverman and Wolfe, 1994).

The cornerstone assumptions present in the evidence and that profoundly influence the context that *Challis* operates within include:

- changes in the Australian and other developed economies and communities mean that most are approaching a ‘*hinge-point*’ of being at the same time least able to afford having significant numbers of children without the skills to participate in a ‘*knowledge oriented economy*’ while having an increasing pool of children destined for lives of limited opportunity and welfare-dependence. Successful countries will be those that find new approaches to address this risk;
- in the main, disadvantage weaves its effects on children in a myriad of small and person-specific ways, over extended periods, rather than as large, obvious effects. This means that strategies to address disadvantage must also be multifaceted, consistently applied and long-term. They need not be large;
- in the main, Australian governments and communities already invest abundant effort in supporting children’s development. In disadvantaged areas though, the effort is often rendered inefficient because current approaches result in: duplication; uneven targeting missing those at most need; intervention that is too late; and inconsistency in focus and ‘*dose*’;
- the innate capacity for life success among children who live in disadvantaged areas is equivalent to that found among their non-disadvantaged counterparts living elsewhere; and
- with rare exceptions, parents want the best for their children over the long-term but those parents in disadvantaged areas are more likely to lack day-to-day knowledge, skills or resources in their home or local community to optimise their children’s life chances.

Challis (a) builds on experience in the field as to what works; (b) makes sense theoretically and pragmatically; and (c) offers a targeted, affordable, and transferable solution for Australia’s most disadvantaged communities.



Background

“Virtually every aspect of early human development, from the brain’s evolving circuitry to the child’s capacity for empathy, is affected by the environments and experiences that are encountered in a cumulative fashion, beginning early in the prenatal period and extending throughout the early childhood”.

(Shonkoff and Phillips, 2000, p.6)

Landmark reports, including the US National Research Council Institute of Medicine’s *From Neurons to Neighbourhoods* (Shonkoff and Phillips, 2000) and the Canadian *Early Years Study* (McCain and Mustard, 1999) have been key drivers of interest in the role the early years play in determining lifelong outcomes. These bodies of work identify that policy rationales for models like *Challis* are apparent in disciplines spanning neuroscience, paediatrics, child development, education, sociology and economics. Further, they highlight a now well-understood and accepted precept that within the early years of life, internal ‘structures’ are being established that will provide the foundations and ‘scaffolding’ for subsequent development. *Challis* acts in accordance with this precept, providing a means for bolstering and enhancing the quality of the *internal structures and scaffolding* of children in disadvantaged communities, with a strategy that begins soon after birth and extends into the early school years.

The approach resonates with calls from international agencies like the World Health Organisation, Organisation for Economic Co-Operation and Development and the World Bank, which encourage governments across the globe to re-prioritise investment in early childhood services so as to reduce disadvantage, build human capital and advance societal wellbeing (Marmot, Allen et al., 2010). Thus, *Challis* provides an opportunity for the Australian government to systematically act in the early years policy space, offering an affordable, evidence-based model that has proven effectiveness *in the field*.



Case for Action

The notion of investing in child development and health to ensure access to a productive workforce has influenced economic planning dating back more than a century. A focus on the *early years* and education has been an important feature of this area. In short, it is well-accepted that nations that plan for, and invest in, ensuring their emergent *human capital* is healthy and well-educated have better economic and social prospects (Sen, 1999).

Importantly, as economies are becoming increasingly globalised, there is a growing need for Australia to focus energy securing an economic base associated with high-skilled enterprise. As a consequence, one threat of national failure to strategically invest in our emergent *human capital* is that the workforce needed to both carve out and sustain a high-skill niche in a changing world economy will not match the profile of the available labour force. It follows, therefore, that Australian governments that invest strategically in their children and youth will ensure the country fares better in the long term in the area of national income and as a consequence, in associated areas like social cohesion, security and well-being.

Investments of this type find extensive support in evidence from the areas of neuroscience, paediatrics, child development, education, sociology and economics. More particularly, there is overwhelming evidence to support investment early in the life course as the most efficient and effective means of maximising long-term physical, mental and social development (McCain and Mustard, 1999; Young, 1997).

It is of concern then that a number of indicators of early developmental health and well-being among Australian children and young people suggest deterioration in some important areas (Vimpani, Patton and Hayes, 2002). These signs are not unique to Australia, with most developed nations around the world apparently in the midst of complex transitions that appear to be having the effect of worsening developmental health and wellbeing. Among the causes seem to be that in most developed countries, income gaps between rich and poor are growing along with significant changes in home life patterns. Aspects of this include increasing levels of family breakdown with more episodes of undervaluing and neglect of children. Other changes are also demanding significant societal adjustments, including changed patterns of parental employment, the expanding role of child care, a more generally rapid pace of work and life, with its associated effects on family-level stress (ABS, 2013).



The burden imposed by these and other changes is substantial and growing. Finding strategies to mitigate their apparent adverse effects on child development seems critical to the economic and social stability of nations. Many governments across the world have recognised this, instituting a range of policies and programs, with varying levels of success. This effort has demonstrated that where children participate in well-designed and comprehensive early childhood development programs, they benefit from higher intelligence quotients, better practical reasoning skills and more advanced coordination, speech and reading readiness. Grade repetition and dropout rates are also lower, performance at school is better, and the probability of progression to higher-level education is greater (Karoly, 2005, Watson, 2008).

Notably, therefore, in the context of *Challis*, the evidence supports the potential of systematic, well-planned interventions to make a difference to outcomes for children, especially those living in areas of significant disadvantage with complex needs (Dockett et al. 2011). Lessons from this area of research include aspects of the type implemented as part of *Challis* are those likely to be most effective in changing the life course for children in disadvantaged families (Moore and Skinner, 2010). Schools have also long been seen as logical and ideal hubs for inter-linked early years services (Waldfogel, 1997; Arimura et al. 2011) and the rationale for using school communities as the focus for the delivery of health and educational services provided to families with pre-school children is straightforward.



What does *Challis* Data say about the Model's Impact on School Readiness?

The Australian Early Development Index (AEDI) measures children's development at the time they start primary school, with scores derived from teacher-completed checklists, covering the developmental domains of physical health and well-being; social competence; emotional maturity; language and cognitive skills; and communication skills and general knowledge. AEDI data is intended for use at school and community level (i.e. suburb or small area locality). At *Challis*, AEDI data has been an important driver of local action.

Developmental vulnerability at kindergarten tends to be compounded throughout the life course, with children who have difficulties in making their transition to school more often ending up: (i) with poor educational attainment and low functional literacy; (ii) leaving school early; (iii) being at higher risk of unemployment and delinquency; and (iv) more prone to substance misuse, crime and suicide.

According to the 2005 Australian Early Developmental Index² approximately 40% of students in the Armadale area (including *Challis*) had one-or-more areas of developmental vulnerability. Moreover, the 2005 data indicated 20% of students in the Armadale area were vulnerable in the language and cognitive domain. By 2008, the picture was even worse, with 46% of children across the Armadale area showing signs of developmental vulnerability.

Following implementation of the *Challis* model, by 2012 the picture for children entering Pre-Primary at the school had dramatically altered. AEDI results indicated a 40% reduction in the prevalence of vulnerability, with 28% of children entering Pre-Primary developmentally vulnerable in one or more domains. Of particular significance was the improvement in the language and cognition domain from having *one-in-four* children scoring in the lowest percentile in 2009 to only *one-in-ten* by 2012.

² Centre for Community Child Health and Telethon Institute for Child Health Research: Australian Early Development Index Community Results 2004 – 2005. www.australianedi.org.au



What does *Challis* Data say about the Model's Impact on School Performance?

Performance Indicators in Primary School (PIPS) is a robust early academic assessment system independently administered by the University of Western Australia (UWA) measuring children's academic progress from the beginning to the end of Pre-Primary. The data it contains can: (a) assess individual and group performance in literacy and phonological awareness; (b) predict future individual and group performance; and (c) identify children needing early intervention.

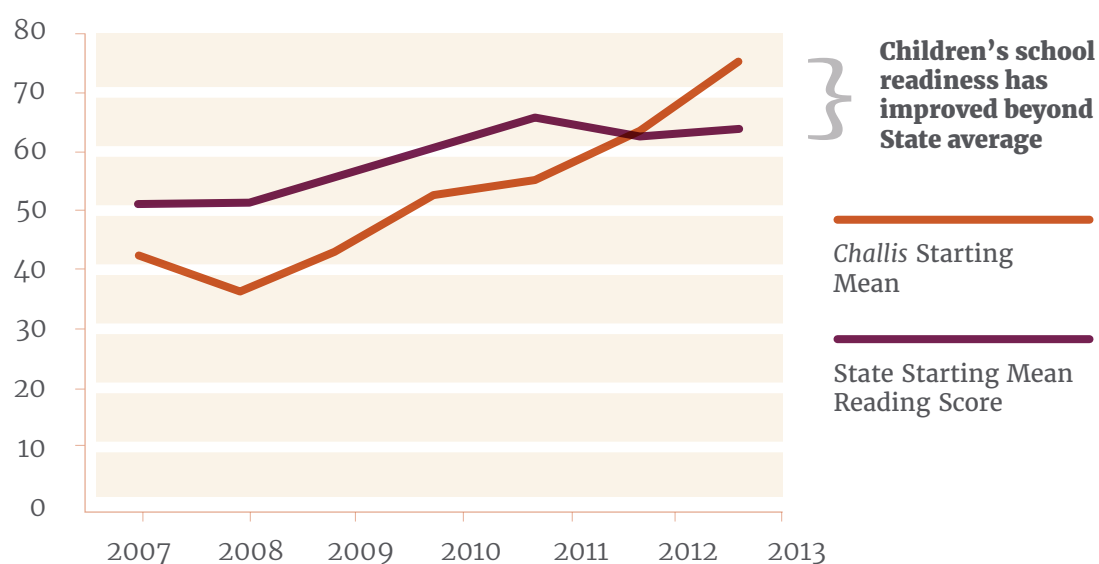
PIPS data relating to *Challis* over the period immediately prior to and following introduction of the *new model* reflect a profound local improvement. In fact, those receiving a '*from-birth, full-dose*' of *Challis* (children in Pre-Primary in 2013) perform at '*better-than-state*' average.

Thus, *Challis* is ensuring almost all local children start Pre-Primary ready to learn and that they then outperform their counterparts in other WA schools by the end of their Pre-Primary year.

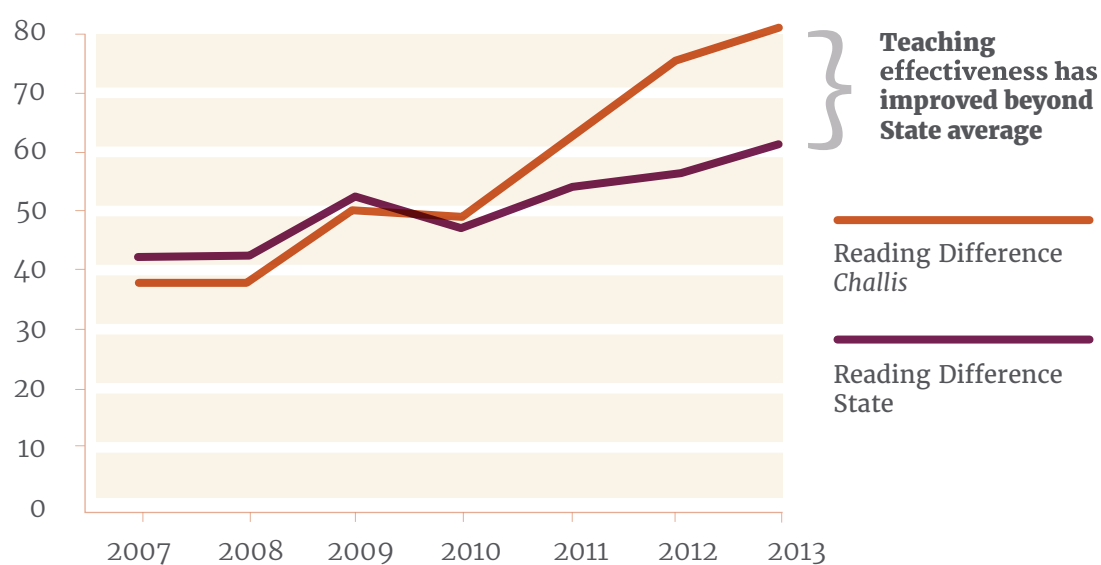
The data reflects the previously mentioned '*lighter more effective and efficient touch*' of *Challis*, where carefully implemented, meshed 0-3 year program elements have been used to bolster school readiness among local children, which has then been augmented with a model of teaching excellence in the kindergarten and Pre-Primary environments. The combined effects of these aspects are reflected in the following figures using data comparing a key indicator of school readiness and teacher effectiveness (literacy scores) for students from *Challis* with those for their counterparts from other Western Australian schools.



**Graph 1: School Readiness Improvement -
Literacy Indicator Challis vs State 2007 - 2013**



**Graph 2: Teaching Effectiveness Improvement
Challis vs State 2007 - 2013**





These graphs highlight the potency *Challis* has in ensuring better pathways for disadvantaged children. It also reinforces the benefit that cumulative, targeted and consistently focussed action can have on children's early development.

At a practical level, the graphs also lend weight to claims of the positive cost-to-benefit profile of this early action model, suggesting it offers an affordable means of addressing the substantial long-term social and economic drag imposed on many Australian children who grow up in disadvantaged environments.





Why Challis Works

Put simply, *Challis* is the model that goes beyond conceptual elements to a practical set of arrangements spanning early childhood through to the primary school years. Early in the development of the model, the key driver, Mrs Lee Musemeci, Principal of the Challis Early Childhood Education Centre (ECEC) sought assistance from researchers at Telethon Kids Institute with the view that any action to be taken on the Challis Primary School site needed to reflect the available evidence base. Professor Sven Silburn provided advice and expertise in the development of the model through his role as a member of the Challis Working Group. Telethon Kids Institute was confident that the model was developed, as far as it was practicable, in light of the available evidence.

Aspects that are reflected in the model include ensuring universal service delivery in a defined area, targeting intervention early to those most in need, ensuring service access barriers are removed, working to a shared vision, and creating a supportive overall culture. These elements are consistent with features of what have come to be referred to as integrated early years' service systems for vulnerable families (Moore & Skinner, 2010). The following sections attempt to shed more light on some of these arrangements.

1. Services are integrated

While to the external viewer *Challis* appears another centre-based effort to integrate a range of disparate human services, this does not do justice to the paradigm. A key difference between *Challis* and other integrated services is that it has at its core *single point accountability*. In this respect, *Challis* can be described as a new generation of integrated service delivery in that it offers an organisational paradigm in which stewardship for children's early development is vested in a single community leader.

The attractiveness of notions of integration of children's services has been largely based on assumptions that single-site servicing is more efficient.



These notions also entail the idea that democratically configured localised multi-agency models with sound communication and linkage between different providers are sufficient for children with the greatest need to be well-served (Waring, 2007). Although such assumptions are apparent in Australian literature (Press et al. 2010) their success as a means of changing children's developmental trajectories appears limited. For instance, the most systematic, comprehensive and expensive effort in the area of multi-service integration in disadvantaged communities has been the United Kingdom's Sure Start program (Valentine et al. 2007). Yet despite the extensive investment made, Sure Start's evaluation identified disappointingly small benefits in areas like children's social development and parenting practices relative to matched control areas (Melhuish et al. 2008).

By taking a single-point accountability approach, *Challis* is able to generate a common or shared human services philosophy and vision for the area and ensure decision-making is driven by a focussed and transparent policy lens for interpreting the features of a service system best able to support the interests of local children and their families. The approach taken is consistent with an extensive and growing body of theoretical and applied literature in areas including the effective reform of human services, the strategic roles and capabilities of front line human service managers and appropriate models of governance, including the important work of the World Health Organization on Stewardship Governance (Travis et al. 2003).

The *Challis* approach also resonates with Kennedy and Hydon's (2007) argument that it is the degree of staff capacity to work with clients and communities within a shared vision that is critical. Despite this, Schmied et al. (2008) has argued that for professionals working with families, this aspect is not usually addressed, with their experience of collaboration tending to amount to referrals about which they subsequently hear little. Pritchard et al. (2010) interpretation is similar, indicating that Australian early years services that are notionally regarded as having been integrated were in fact merely co-located.

By adopting single-point accountability, *Challis* eschews the complexity of negotiating myriad differing views as to the end-point purposes and underpinning philosophy of local programmatic elements. In doing so, it avoids investing effort in traversing and attempting to resolve subtle but potentially significant differences in what different professionals see as important to families and their children (e.g. Ashton et al. 2008; Nichols and Juvansuu, 2008) in favour of emphasising that children's potential to participate fully in social and economic life begins with and is reflected in early educational success.



A variation on the theme of integration is the concept of ‘collective impact’. According to research conducted by Kania and Kramer (2011) they have identified five conditions of collective impact that together leads to powerful results. These include centralised infrastructure and dedicated staff, structured processes that lead to a common agenda, shared measurement, and continuous communication and mutually reinforcing activities among participants; all of which are reflected in *Challis*.

2. Steward Leadership

Leadership style is a critical element of *Challis*. Alexander and colleagues (2001) argue that service integration achieves most when leaders provide:

- Systems thinking – an emphasis on population-level outcomes and an awareness of how local systems work to influence outcomes for participants;
- Vision – an underpinning philosophy and long-term goal, a unifying reason for partnership;
- Power sharing – encouragement of full involvement of paid staff and community representatives in planning and policy decisions; and
- An information orientation – establishment of effective systems for two-way flow of information supported by widespread stakeholder input and participation.

These aspects, evident in the approach taken at *Challis*, are also consistent with the notion of Stewardship Governance (Donaldson, Schoorman, & Davies, 1997) seen as appropriate to dealing with the complex issues confronting the public sector in areas like those faced in the *Challis* community (Armstrong, 1997).

Based on observations, informal interviews with staff and the Principal of the ECEC (now the Principal of the Challis Primary School) the leadership of *Challis* includes the following aspects:

- Specific and communicated expectations of staff;
- Staff have control and autonomy within a framework of expectations;
- Staff are encouraged to think outside the square (innovation);
- Leader has content knowledge about early childhood development;
- Communicates trust in staff;



- Leadership is solutions focused;
- Supportive leadership style;
- Follow through – leader makes things happen; and
- Focus on professional development.

3. Pathways and Transitions

Pathways to social and economic adversity are complex, interactive and multidimensional. They start early (sometimes pre-birth) and involve different parts of an individual's social world. This complexity suggests there are many types of intervention that can help divert children from a path of adversity to one of success.

According to Kania and Kramer (2011) fixing only one point of an educational continuum doesn't make much of a difference unless all parts of the continuum improve at the same time. The coordination of efforts at every stage of a child's life from birth (cradle to career), focused on a single set of goals, as seen in programs such as Strive in Cincinnati in the United States of America, are successful in improving student achievement in vulnerable areas.

Hertzman (2000) refers to several ways in which early experience influences subsequent health, wellbeing and life chances. One, the *pathway* effect, refers to the fact that some areas of development rely on a platform of past experience to enable new skills to be developed. Challis embraces Hertzman's (2000) notion of an *educational pathway* beginning at birth which is subsequently reflected in a child's school '*readiness*'. This comprises a platform of language, cognitive, social and emotional skills that represent key developmental tasks of the pre-school years. Those lacking this platform of readiness knowledge and skills are at risk of subsequent school failure and poorer long-term life outcomes. Ensuring the platform is appropriate at school entry is therefore a key focus for Challis.

Challis also ensures children receive doses of developmental services that are of sufficient intensity, timeliness and duration to make needed differences to each individual. The approach taken reflects Hertzman's (2000) notion of the cumulative effects services strategically designed in this way can have in influencing the longer term health and wellbeing of children across a community.

A concept relevant to pathway and cumulative effects is *life phases or stages*. These are biologically apparent (e.g. walking occurs at around 1 year etc.)



and societally prescribed (e.g. age at school entry etc.). Of importance to *Challis* is evidence indicating that ‘transitions’ from one life stage to another (e.g. school entry) are times of vulnerability and openness to change (National Crime Prevention, 1999). These points are key times for parents/caregivers and their children. Those enrolled into *Challis* receive a tailored support path leading from birth to school entry and beyond, ensuring they are less vulnerable at key transition points. Specifically, at school entry, *Challis* reflects Cochran’s (2011) guidance that the impact of this transition can be reduced by ensuring:

1. **Pedagogical and program continuity** – across early childhood services and schools (e.g. a 0–6 curriculum);
2. **Professional continuity** – encouraging early childhood professionals and primary teachers to work to reduce professional boundaries and provide greater seamlessness between their services; and
3. **Continuity with home and community** – encouraging greater parent involvement in the transition to school.

Another emphasis of *Challis* is adherence to Halfon and colleagues (2010) guidance on core early years’ services program components. They suggest three universal pathways as the appropriate foci for community efforts to enhance child development:

1. **Developmental Screening** – tracking the early developmental progress of children so that those in need of intervention can be identified early and referred to the appropriate services;
2. **Developmental Intervention for Early Literacy** – helping parents to prepare their children for reading and writing via direct advice and through supportive programs and services; and
3. **Developmental Anticipatory Guidance** – offering parents age appropriate child-rearing advice.

4. A Flexible and Responsive Approach

As noted previously, a characteristic of the *Challis* model is that barriers to school readiness are removed and engagement with individual families is responsive to their circumstances. This tailored and timely approach to intervention ensures services are delivered more cost efficiently and effectively, always with the support of families. The approach taken reflects the principles of family-centred and strengths-based practice, which are increasingly seen as central



to effective human service practice for disadvantaged families and communities (Rossiter, Fowler, Hopwood, Lee, & Dunston, 2011). This approach is a core feature of the overall sustainability of the model, ensuring it focuses on building family and community capacity to support the development of local children.

5. A Unifying Philosophy

The *Challis* philosophy reflects perspectives on the developmental environment apparent in other comprehensive child development programs (Garbarino, 1995). This has its roots in Bronfenbrenner's dictum that the effective early years initiatives will be both comprehensive and with extensive links between the various components. However, as Bradley and Corwyn (2010) argue, cohesion and shared values across all those working within an initiative like *Challis* are also critical to achieving better outcomes for children in their disadvantaged communities.

For *Challis*, this cohesion and sense of shared values derives from a common philosophy embodied in the following principles and reinforced by its leader:

- **Every child can succeed** – That all children can succeed despite their socio-economic or family background;
- **Schools make a difference** – That school can make a difference to children's and their families lives;
- **No one is to blame** – That all parents want the best for their children but not all parents are capable of providing the best for their children;
- **Minimum expectations of children and their families** – That there is an expectation explicitly conveyed to families that children's participation in school is essential;
- **Excellence in teaching** is essential to good outcomes for children;
- **Respect for culture as well as building the relationship between family and school.** This is an important part of Indigenous engagement; and
- **Doing what needs to be done** – A flexible approach to access and ensuring all children can get to school ready to learn.



6. Summary

By way of summary, *Challis* entails the following elements:

- ✓ Very early engagement with parents;
- ✓ A focus on core social and cognitive skills development as priorities;
- ✓ Timely linkage of parents and children to relevant child development and parenting services at the right dose and using the principles of family partnership and strengths based practice;
- ✓ Early introduction of families to schools to break down barriers and foster parental participation in children's education and the governance of the model;
- ✓ Opportunities for facilitated social and cognitive enrichment for mothers and children prior to school entry to assist in building family and community capacity to support child development;
- ✓ Establishment of support networks and skills development for families at risk (incorporating a developmental anticipatory guidance approach: offering parents child-rearing advice that is age appropriate and emphasises priority issues in development);
- ✓ Early intervention for children with developmental delay (incorporating a developmental screening approach involving tracking the early developmental progress of children so that those in need of intervention can be identified early and referred to the appropriate services); and
- ✓ A highly linked, consistently applied and structured k-7 literacy and numeracy curriculum.





What about Long-Term Benefits?

While it is too soon to suggest *Challis* has had transformational long-term effects on local children, extrapolation of findings from long-term interventions based on consistent principles and practices offers a guide as to the benefits that might be expected and provides guidance as to the key elements of an enduringly effective model.

The following compares the core features of *Challis* and the *Chicago Child Parent Center Program* and indicates the effects an apparently similar intervention has had on the life chances of the vulnerable children it targeted. Like *Challis*, the *Chicago Child Parent Center Program* (CCPC) was centre-based, offering a comprehensive range of early education, parenting and family support targeting children from early in childhood through to their early primary years. CCPC also focused on families living in high-poverty neighbourhoods (Reynolds, 2000).

Longitudinal evaluation of CCPC indicated that like *Challis*, CCPC participation was associated with cognitive gains at school entry and higher achievement scores during elementary school (Reynolds et al., 2001). In a follow-up study, at age 20, children who received the CCCP intervention also had a significantly lower incidence of crime at age 18 and higher rates of high school graduation by age 20 than their comparison (control) group counterparts (Reynolds et al.). Reynolds (2002) identified the components that were the key to CCPC's positive results and in each case, they accord with what occurs at *Challis*:

- Structured and diverse language-based instructional activities to promote academic and social success;
- Intensive individualised learning in pre-school and kindergarten;
- Multi-faceted parent programs: parent room activities; volunteering in the classroom; school events; educational courses;
- Outreach activities – resource mobilisation, home visiting, and engagement of children most in need;
- Investment in developing the skills of all local staff;



- Health and nutrition services including health screening; speech therapy, shared nursing services, and meals programs for those in need; and
- A comprehensive program supporting children's transition to school through small class sizes (<25 kids), use of teacher assistants, and coordination of instructional activities by a school leader.

The *Challis* experience can also be compared to another successful program implemented in some states of the United States of America. Strive is a not for profit community initiative focused on the educational continuum from 'cradle to career' in an effort to coordinate improvements at every stage of a young person's life (Kania and Kramer, 2011). This program found success, firstly in getting children prepared for kindergarten, then through success in fourth grade reading and math scores; and then success in high school graduation rates. This program prescribes to the collective impact philosophy that can be mapped to the operation of *Challis* providing a positive indication of the potential longer term benefits for *Challis* children. This potential effect will be even more powerful if the *Challis* model is extended through to Year 7 and into high school.





A closer look at programs offered by *Challis*

Challis is a comprehensive set of programs and strategies delivered to parents and children that live within the Challis Primary School catchment area. The delivery of these services occurs mostly at the Challis Primary School site in Armadale, however, where needed, programs will include home visiting (particularly in relation to engagement with Aboriginal families), as well as the provision of transport for at risk children and their families to and from school.

The suite of programs delivered at *Challis* changes depending on the needs of families and funding. The comprehensive network of services provided to children and their families has been orchestrated through the leadership and vision of *Challis*. There are a number of funding sources for the services and programs provided by *Challis* and these include:

- Department of Education (DOE)³
- Minderoo Foundation who funds the *Challis* Early Childhood Education Centre (ECEC)
- Department of Health, Western Australia (DOH)
- Disability Services Commission, Western Australia (DSC)
- Non-government agencies (such as Parkerville Children and Youth Care Psychologist)
- ‘pro bono’ from Curtin University Speech Pathology and Occupational Therapy students.

Coordination of *Challis* is achieved by a part-time *Challis* Coordinator who is funded through the Challis ECEC. *Challis* can be divided into programs and services. Programs are defined as group interventions; while services are provided one-on-one to parents, children or both.

³ The Challis ECEC operates as an independent public school which means that funding can be used at the discretion of the Principal in the delivery of child development educational services. The Principal can also seek additional funding such as that provided by Minderoo Foundation to assist in funding services provided by the Parenting and Early Learning Centre (PELC) which is operated by the ECEC.



Table 1: Description of the components of Challis

This table provides a list of services and programs provided within the Challis model. It also provides an indication of how that program or service is funded; and where information was available, an indication of the approximate time/cost commitment for each of the services or programs.

Program	Funder	Time /cost commitment
Core programs for children aged 0-kindergarten and parents		
Pre-Kindergarten (Pre-K) (including Aboriginal specific)	Challis ECEC (DOE)	4 groups (2 x 1/2 day per week each) 1.0 FTE Teacher and 2 teaching assistants (\$178,410 annually)

Comments

By the end of the year *Challis* will have 4 groups of Pre-K classes, 20 children in each class. Each class consists of two half day sessions each week. The sessions run on consecutive days. Start dates are flexible for children as they turn 3 years old. The Pre-K teacher conducts home visits with the Family Support worker to families with children nearing 3 years. The purpose of this is to meet the prospective parent and child, discuss the benefits of Pre-K, determine whether the parent has any concerns about the development of the child and follow up with reminder phone calls as the child nears his/her 3rd birthday. The family is also linked in with the Child Health Nurse to ensure that they attend (if they haven't already). Further, the Pre-K teacher has her planning and preparation time on the same day as the kindy teachers so that they can exchange information about children, ensure that the Pre-K programme is preparing the children for Kindy and suitable handover is completed about each family. This is the connection and seamless transition part of the programme which differs from other current models.



Program	Funder	Time /cost commitment
Provision of professional Speech Therapy and Occupational Services at Three year old Kindergarten	DOH (child development services)	4 groups (2 x 1/2 day per week each) OT 0.4 FTE, Speech 0.2 FTE, Speech Therapist assistant 0.2 FTE.

Comments

The time commitment for allied health is considered to be insufficient to meet the need at *Challis*. Ideally, the Occupational Therapist would be at 0.5 FTE and the Speech Therapist at 0.5 FTE.

Playgroup (mainstream, Aboriginal and multicultural) (Challis ECEC)	Challis ECEC	2-4 mornings per week 0.6 Education Assistant (\$32,512) (but warrants an extra 0.2 FTE) Coming on board an Aboriginal Education Officer funded by the Department of Education.
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Comments

The playgroups are conducted according to need. Currently there are two mainstream playgroups (funded by Minderoo). Save the Children previously ran a multi-cultural playgroup once per week (however, this playgroup has achieved its intended purpose and all the English as a Second Language families have transitioned to mainstream playgroup). The Education Assistant coordinates the services going in to the playgroup so that it isn't overwhelming for families. The Child Health Nurses pop in and out of the playgroups each session to follow up with families, provide informal information or to complete assessments. Curtin students and their supervisor also attend and provide therapy, assessments or information. The Family Support Worker transitions new families in to playgroup until



they have found a friend and feel confident to attend by themselves. In instances where parents do not attend, the Family Support Worker will pick them up in the car, feed them, provide suitable play and some schooling experiences and take them home again. In an effort to improve engagement by Aboriginal families a number of outings will be made in to the community with parents. The school will fund the Aboriginal Education Officer (0.1 FTE) to join the Pre-K teacher.

Program	Funder	Time /cost commitment
Provision of Trainee Speech Therapy and Occupational Therapy services (within 3 yr old kindy and playgroups)	Curtin University	Pro bono

Comments

Students provide therapy assessment and information at playgroups and within 3 year old kindy.

Weekly parent workshops	Challis ECEC and DOH	2 hours per week 0.1 FTE as well as an Education Assistant
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Comments

There has been mixed success with the workshops. Attendance at workshops conducted by outside people has been poorly attended. However, where sessions are facilitated by an ECEC staff member Challis parents are more likely to attend.



Program	Funder	Time /cost commitment
Breakfast club	Challis ECEC	As needs basis
Early Parenting groups (first time parents)	Core DOH funding	

Comments

The Child Health Nurse runs Early Parenting groups and they include Curtin allied health and psychology students. The Child Health Nurse conducts these groups for parents who have babies from 6 weeks – 12 weeks, as well as parents with babies from 3 months to 12 months.

Core services for children aged 0–kindergarten and their parents

Challis Coordinator	Challis ECEC	0.2 FTE
Family Support Worker	Challis ECEC	1.0 FTE
Immunisation clinic provided by Department of Health (DOH)	Core DOH funding	One clinic per month

Comments

There have been issues with the provision of the immunisation clinic although the Principal is confident that it will be reinstated sometime soon.



Program	Funder	Time /cost commitment
Child health services (including post natal home visit) note: this service is also provided to families outside the Challis catchment	Core DOH funding	Drop in 9-10.30am Wednesdays; 2 full days (Mondays and Thursdays)

Comments

The Child Health Nurses are absolutely instrumental because they understand the need to move away from the traditional Child Health Nurse role and are willing to work to develop parenting capacity in addition to performing the required role as a Child Health Nurse.

Core services for children aged Kindy-Year 2 and their parents (cont)

School Health Nurse provided by Child Adolescent Community Health (CACH) (core DOH funding)	Core DOH funding	Not available
Psychologist provided by Parkerville Children and Youth Care (non-government funding)	Non-govt funding (grant funding)	Referral on an as needs basis

Comments

The Psychology service is used for the school aged children. The Coordinator of the Psychologists sits in the Pre-K student services meeting and facilitates quick appointments for the Pre-K children with a Paediatrician through the George Jones Advocacy Centre.



Program	Funder	Time /cost commitment
Health and Wellbeing Coordinator	Challis ECEC	As needs basis

Comments

The Health and Wellbeing Coordinator moves easily between the PELC and the school aged programmes.

Disability Services Commission (DSC)	Core DSC funding	As needs basis
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Comments

There is currently no presence of DSC at the Challis site at this point in time.

Department of Child Protection (DCP)	Core DSC funding	As needs basis
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Comments

This is a very much needed partnership in this community, although the capacity of DCP at this time means they do not have a presence at Challis.



Program	Funder	Time /cost commitment
Other programs and services provided on an as needed basis		
Western Australian Institute for Deaf Education Early Intervention (non-government funding)/ Community Link and Network (CLAN WA Inc)/ EARBus Telethon Speech and Hearing	Non-government funding (grant funding)	As needs basis
Creche services	Challis ECEC	As needs basis
Home visiting services	Challis ECEC	As needs basis

Comments

The Family Support worker does home visits, as well as the Pre-K teacher, and the Principal where required.

Educational Program Aspects (kindergarten to Year 2)

<i>Challis</i> prescribes to a highly linked, consistently applied and structured K-7 literacy and numeracy curriculum including the innovative use of technology	Department of Education	2 days per week for kindergarten; 5 days per week for Pre-Primary to Year 2; and Year 3 to Year 7 <i>Challis</i> ECEC and <i>Challis</i> Primary employs 40 teachers (not including Administrators).
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Program	Funder	Time /cost commitment
		Challis has maximum class sizes, 20 in Kindy class, 25 in most Pre-Primary classes, 24 in each Yr 1-Yr 3 class, 30 in each class from Yr 4-7.

Comments

The teaching focus is placed on literacy, numeracy and social emotional development. The Challis pedagogical approach includes a balance between the explicit teaching of skills through a systematic, sequential whole school plan (with clearly articulated targets for the end of the year, end of the term plus progress targets that describe expected progress) and plenty of opportunity for play, inquiry, exploration and discovery. Ongoing assessment determines what support is required for each individual child plus classroom observations of teachers to identify excellent practice and areas that require an improvement in performance. High expectations of student performance are held by all staff and driven by the Leadership team. Parents are kept informed, are valued as partners in their child's education and are encouraged to help in classrooms. Emotional and social development is supported through a whole of school approach in teaching virtues.

Support staff are on hand to provide individual and small group therapy, counselling or skill development groups (Chaplain, Health and Well Being Teacher, Curtin students, Psychologist etc). Poor teacher performance is dealt with.



Conclusion

The aim of this paper was to present a detailed review of the Challis model and the evidence supporting it with the view of advocating its relevance for implementation in other vulnerable areas of Australia. This paper has argued that the potency of *Challis* is that it is relatively low cost. It does not solve problems of early disadvantage via a heavily layered costly sequencing of multi agency ‘top up’ interventions. It provides a targeted, long term cumulative course of action commencing at birth and extending through the primary school years. It ensures children start school ready to learn, where their subsequent education pathways are supported by highly effective, efficient and systematically applied teaching methods. Simultaneously, children are also supported by higher levels of parental engagement and commitment to education and by a community more focussed on achieving specific, ambitious end point educational goals.





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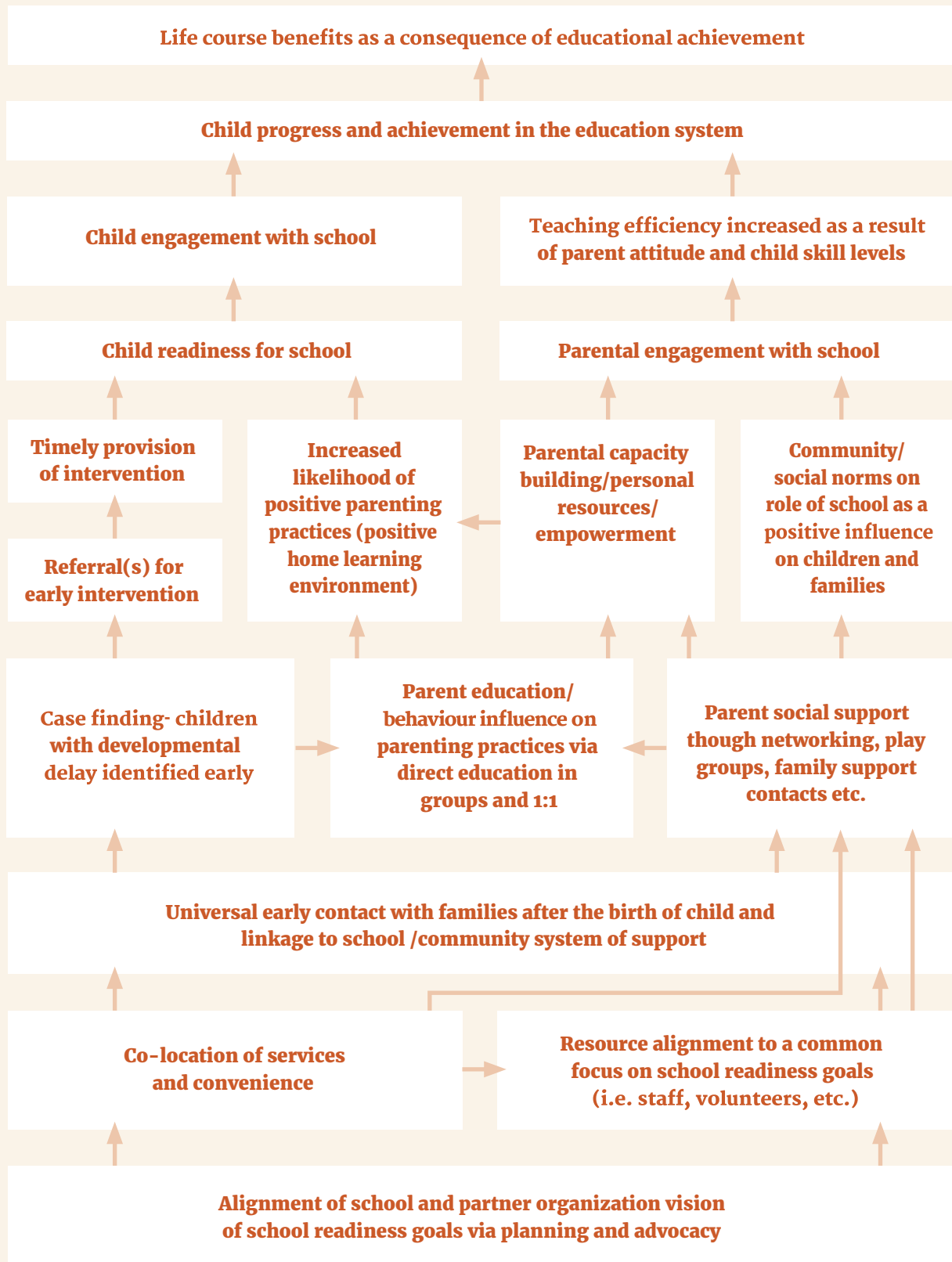
Appendix 1: Does *Challis* have a Clear Program Logic?

Program logic reflects the underpinning theory as to how and why an initiative like *Challis* works. Transparent program logic is a key to the policy transferability of the initiative and is central to long-term research and evaluation of the model. Importantly, the detail of its program logic highlights how *Challis*'s authors believe it works. This includes the sequencing of core actions and the means by which it is anticipated desired outcomes are ultimately achieved (Kellogg Foundation, 2004 p. 1).

The Logic Model for *Challis* outlined overleaf reflects conceptual and practical work done to develop and refine the model over a number of years and is consistent with a broad body of theory and evidence on promoting better outcomes for disadvantaged children.



Challis Program Logic





Appendix 2: The impetus for Challis

The school-community transition to a progressive centre based child development model had its beginnings in 2005. For many years school data and teacher experience indicated student performance at *Challis* was well below state norms. Close examination of teaching programs indicated that whilst some innovative and dynamic programs were adding value, the School was well behind State benchmarks. Further examination revealed that many children began school with no prior contact to developmental health specialists and in need of referral to one or more of these health professionals (e.g. paediatrician, psychologist, speech pathologists, occupational therapists). Staff working in *Challis* acknowledged that local problems with children's development were symptomatic of larger, complex problems that had their foundations in socio-economic vulnerability; generational welfare dependence; and poor parental engagement and involvement in the school.

Essentially, children living in the Challis catchment were not entering school ready to learn. They were not meeting national testing standards for educational success. Whole of state and national testing results showed that the performance of students at Challis ECEC and Primary School in Maths, Writing, Reading and Spelling fell well below state and national norms.

Analysis of the data indicates that students entering school at Year 3 were well below the development levels of the vast majority of other schools.

Children were starting school so far behind the vast majority of other students in the State the gap in performance even at kindergarten was already evident; this gap was already too wide for a significant number of children who were at real risk of poor educational attainment across their life-course.

In 2005, Performance Indicators in Primary Schools (PIPS) showed that at the beginning of the Pre Primary year, only 29% of the Challis ECEC children were at the same starting point as their 5 yr old peers across the nation. This meant that 71% of the Challis ECEC children were below or significantly below the starting point of their peers. Some were up to 18 months behind in terms of their reading, phonics and maths skills. The 2005 AEDI data showed that 25% of Pre-Primary students enrolled at Challis ECEC were developmentally vulnerable in the Language and Cognitive skills domain. In 2008, the same group children completed the NAPLAN (National Assessment Program in Literacy and Numeracy –



formerly Western Australian Literacy And Numeracy Assessment (WALNA) at Year 3). 55% of these same children were at or below the National minimum standard in reading.

As a result of these worrying statistics for children attending *Challis* Primary; the ECEC introduced a number of individual programs on school premises for children between birth and 3 years and their parents. Although these programs attracted excellent attendance and participation of toddlers and their carers, there continued to be pervasive unmet needs stemming from the unique, complex and multi-faceted issues faced by the families living in the Challis catchment area. This provided the impetus for the full development of the Challis model.



Appendix 3: An Overview of Challis and its Catchment

Challis Early Childhood Education Centre (ECEC) is a Level 4, Department of Education and Training school situated on a shared site with *Challis* Primary School. The ECEC implements the *Challis* model; the early years component of the model is called the *Challis* Parenting and Early Learning Centre (CPELC).

Up until the implementation of the *Challis* model the ECEC saw children from kindergarten to Year 2 who lived in the *Challis* Primary School Catchment Area. The *Challis* Primary School enrolls children from Year 3 – Year 7. The two schools share a main reception area where they operate independently with their own Principal and Administration staff. There is close liaison between the two administrations.

The relocation of another service (Canning SocioPsychological Educational Resource (SPER) Centre) that was on the *Challis* site created the opportunity for the *Challis* model to develop.

The *Challis* ECEC has an enrolment of 425 children while the *Challis* Primary School (Yr 3 to Yr 7) has an enrolment of 372. *Challis* ECEC has gained a reputation in the area as being an excellent school and hence there is a waiting list for out of area enrolments. The Pre-Kindergarten program (3 year old kindy) has an enrolment of 80 children.

Where is *Challis* implemented?

Challis is located in the Armadale area of the Perth Metropolitan Area in Western Australia and operates in an area of extreme disadvantage. The Vinson Report (2007) into vulnerability across Australia highlighted the Armadale region as being one of the six highest ranking disadvantaged communities in Western Australia. The author recommended that sites in the Armadale area as being in the greatest need for funding to reduce the intergenerational cycle of disadvantage. The Vinson Report went on to acknowledge that social disadvantage within communities such as Armadale can be reduced with the “right level of will joined with the correct programs targeted to the right locations” (Vinson, 2007, 2). Further to this, the rationale for focusing efforts in areas such as *Challis* is provided by work commissioned by Council of Australian Governments (COAG) undertaken by the Boston Consulting Group (2008). This pointed to the merit of establishing integrated and intensive child and family centres in the nation’s



poorest areas, highlighting that 41% of Australia's most disadvantaged 0–5 year olds lived in the 20% most disadvantaged suburbs.

An analysis of the 2011 census provides information on the social characteristics of the Challis catchment population as distinct from Armadale as a whole. The Armadale area has a historically high proportion of children and young people compared to the State and Perth metropolitan averages. In the Challis catchment area this proportion is higher still, 9.3% of the population was 0–4 years old compared to 7.9% in Armadale and 6.6% in Perth. For children aged 5–11 years old the percentages for the catchment area, Armadale and Perth were 10.5%, 9.4% and 8.7% respectively.

The proportion of one parent families with children under 15 years of age was also relatively high for Challis at 6.6% of households compared to 3.9% for the Perth area. Combined with a high unemployment rate of 6.4%, compared to Armadale (5.4%) and Perth (4.8%) the burden on families is increased. Another significant characteristic of the Challis catchment area is the percentage of Aboriginal and Torres Strait Islander residents which was 4.1% in 2011 compared to 2.8% and 1.6% for Armadale and Perth respectively.

The national average for the Socio-Economic Indexes for Areas (SEIFA) disadvantage measure is 1000, a lower score reflects greater disadvantage. The score for the Challis catchment area was 965.9 which is below the national, Perth (1033.4) and Armadale (996.1) averages and is indicative of greater socio-economic disadvantage for the population as a whole.

Considering the well-known social and economic difficulties that are born of population specific disadvantages it is necessary to prioritise the need for stronger and more integrated community support systems specific to areas such as Challis. Children from socially and economically disadvantaged areas such as Armadale typically have poorer physical health, less access to learning materials from infancy, and are less likely to access material and cultural resources than their counterparts in more affluent areas (Bradley and Corwyn, 2002). Moreover, minority-group parents are less likely to access health and educational resources for their children. When children from impoverished families do access these resources, they are likely to do so later in the course of problems.

This characterisation fits with the picture of Australian children from low socio-economic status areas getting a relatively poorer start in life, being more likely to have decayed teeth, to be overweight or obese, and to be developmentally vulnerable at school entry (Bradley and Corwyn, 2002).



Appendix 4: A Brief Background to Model Development

Between 2005 and 2007 a number of community meetings were held where managers of various government and non-government agencies came together to discuss how to address issues of poor educational success. The primary outcome of these meetings was agreement that targeting children in the 0 – 3 year age group should be the priority and that services could be provided on the school site. These meetings, however, were unable to secure commitments from the agencies to provide the required services on the site. Nevertheless, the principals decided to seek funding from a variety of sources so they could pay for services required on their site themselves. The applications for funding received mixed results and some services were able to be implemented while others were not.

Early in 2008 another meeting was held. This included the existing stakeholders as well as members of Leadership WA, a broader range of service providers as well as the Armadale Council. This meeting was described as a ‘think tank’ to collect ideas as to how to progress the model. As a result of the meeting a smaller group was established to develop a Business Case and another group was established to develop applicable governance models.

On 1 September 2008, the Armadale City Council hosted a forum to look at the provision of services for children in the Armadale City Council area. The overwhelming outcome of this forum was to push for the development of ‘hubs’ of services to be developed on school sites across Armadale area. This outcome reinforced the direction taken by the Principals on the *Challis* site.

The Challis Principals established a number of working groups to progress the school ‘hub’ proposal. The Telethon Kids Institute was engaged early on in the development of the model and provided an evidence based perspective to services delivered on the *Challis* school site.



Throughout the development phase the Principals of *Challis* also engaged with various government and non-government agencies to investigate potential partnerships. This has resulted in partnerships (and subsequent funding) being developed with:

- ING Realty, who supplied a vehicle (Tarago Van) for the school to use to support children and their families;
- Parkerville Youth Services, who provided Social Work services one day per week and an additional one day per week is contracted by *Challis*;
- Department of Communities, who provided 12 months funding for the Family Support Worker; and
- Therapy Focus, who conducted the Communication Capers programme which helps develop language in the Kindergarten cohort.

Over time, and consistent with the ability to attract funding to deliver services within the model the following have been provided (and most are still provided) at some stage in the history of *Challis*:

- Early Learning group for 0-4 yrs including playgroups;
- Indigenous Early Learning Group;
- Pre-Kindergarten (3 year old kindergarten);
- Social Worker providing counselling, referrals, support to parents;
- Chaplain;
- Family Support Worker;
- Transport services;
- Child Health Nurse;
- Community Health Nurse;



- Aboriginal Health Workers;
- Indigenous Paediatrician;
- Hearing services;
- Psychology services; and
- Allied Health including speech therapy and occupational therapy.

Prepared under Agreement between the *Minderoo Foundation* and the *Telethon Kids* *Institute*

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Collaboration for Applied
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