



Developmental Pathways in WA Children Project

The Developmental Pathways in WA Children Project (DPP) links de-identified population level data from Western Australian (WA) government departments and agencies to investigate risk and protective factors leading to differences in developmental outcomes for children and youth. The DPP is governed by an inter-agency steering committee and has strict protocols for data usage. This project provides new knowledge to inform and enable future policy and prevention strategies to improve child health and wellbeing.

The DPP is made possible by generous cash and in-kind contributions from the WA government departments of Health, Education, Local Government and Communities, Child Protection and Family Support, Corrective Services, the Attorney General, Housing, Treasury, Aboriginal Affairs, the Disability Services Commission and the WA Police. These contributions have been matched by the Australian Research Council (ARC) through two ARC Linkage Project Grants.

The DPP has taken a multidisciplinary and holistic approach to research into the health, development and wellbeing of children and youth, by initiating and utilising linked, longitudinal population level data. The data are used to determine risk and protective factors leading to poor and good outcomes in WA children. The DPP pioneered population level data linkage across multiple government service sectors in Western Australia, creating a unique data resource for use by researchers and policy makers.

The project represents an innovative collaboration between researchers, primarily based at the Telethon Kids Institute, and 14 government jurisdictions in WA. The government departments involved in the Project are:

Department of the Attorney General
Department of Education
Department of Treasury
Department of Corrective Services
Department of Aboriginal Affairs
WA Police
Mental Health Commission

Department of Local Government and Communities
Department of Housing
Department for Child Protection and Family Support
Department of Health
Disability Services Commission
Department of Training and Workforce Development
School Curriculum and Standards Authority

The Telethon Kids Institute is dedicated to translation of research findings into policy and practice. In collaboration with community and consumer groups and the State government agencies, it is anticipated that the findings from the DPP will inform whole of government intervention and prevention strategies to improve outcomes, influence policy frameworks as well as evaluate and monitor existing initiatives and policies that affect the health and well being of children, youth and their families.

The primary aims of this collaboration are to:

1. Extend and expand the pioneering population level data linkage across multiple disciplines and government sectors in WA established in 2004-2008;
2. Ascertain whether changes in factors at the child, family and community level increase or reduce vulnerability to adverse outcomes in mental and physical health, education, child maltreatment, juvenile offending, in all WA children;
3. Identify areas of prevention and intervention across multiple government sectors, particularly in regard to mental health, disabilities, child protection, juvenile justice, educational achievement and school attendance;
4. Use these data to evaluate existing government initiatives and determine, at a population level, how initiatives have impacted on educational, social and health outcomes;

5. Improve the collection, utilisation and reliability of Government department data in program evaluation and policy development; and
6. Respond to the government departments' agendas and policy frameworks, while enhancing whole of government initiatives.

This project is internationally innovative in its use of linked statutory and government agency data sets to measure and monitor child development and wellbeing at the population level. We are one of the few places in the world that has the depth and breadth of information, expertise and capacity not only to conduct cutting edge research, but also to translate the findings into policy and practice, thus making this project innovative on an international scale.

The project encompasses a number of important areas of research; mental and physical health, child abuse and neglect, alcohol and drug use, juvenile delinquency, disability, education and housing. We have a large number of research questions which overlap areas of focus. This reflects the complex nature of many of the problems facing Australian children and youth, and highlights the strengths of this project to address these multi-sectoral issues. The questions can be grouped into two broad areas:

- 1) Improving the understanding of the child, family and community factors involved in the pathways to juvenile offending, child abuse and neglect, poor physical and mental health outcomes, educational achievement and school attendance/suspension; and identification of required interventions to optimally influence pathways; &
- 2) Monitoring of outcomes and evaluation of existing initiatives and policies.

Data that are linked and used by the Developmental Pathways Project

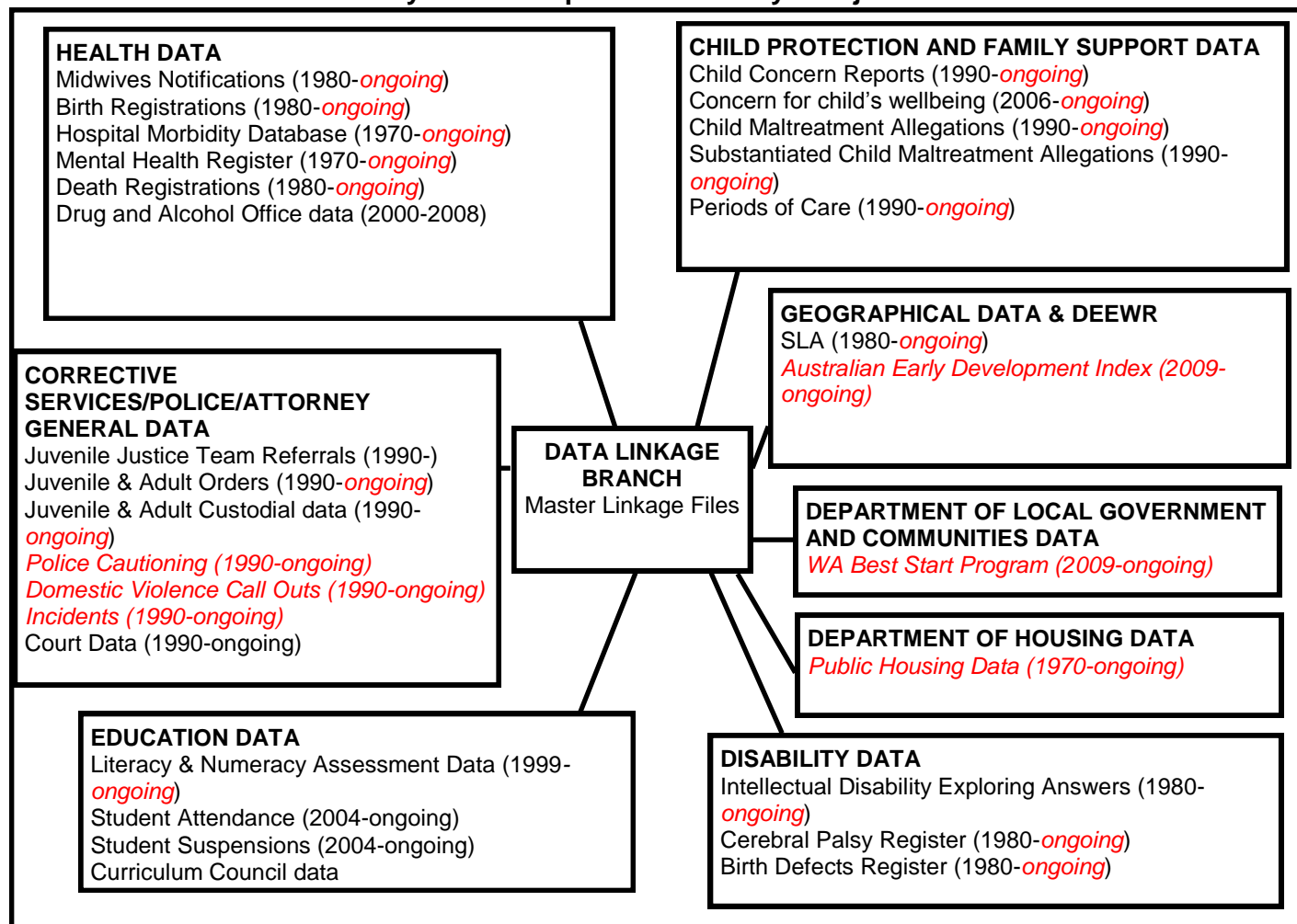


Figure 1. Text in black represents linkages made, and text in red (italicised) represents linkages planned or underway

Community and Consumer Participation

The Telethon Kids Institute recognises the central role of health consumers and community members in its research. Our aim is to develop partnerships in which consumers, community members and researchers work together to make decisions about research priorities, goals, methodologies, questions, and dissemination of results.

A community reference group, which has membership from the stakeholder organisations, has been established to provide researchers with the ongoing support and advice as well as having a role to enable and support the implementation of the participation strategy.

Developmental Pathways for WA Children Project Governance

The DPP adopts a governance structure that ensures maximum communication across all levels of the project. The Directors' General Steering Committee includes the Directors General from all the participating agencies. The Directors' General Steering Committee directs policy based research, and sets the research agenda. Their job is to decide the priority areas for their agencies, and to direct researchers toward those key areas. The Advisory panel sits below the Directors' General Steering Committee and provides high level advice and expertise to the researchers. The Advisory panel has members from each of the government departments, as well as the Telethon Kids Institute. The Research Management Group sits below the Advisory Panel and is kept informed of all scientific, research and management issues. This group also has members from each of the government agencies, members from the Telethon Kids Institute, and all the researchers' involved in the DPP. At each level of governance there is a consumer and community representative. Consumer representatives help provide direction and advice, from a community perspective and help focus each of the projects on areas of importance to consumers.

A selection of research outputs from 2009-2010

Langridge, A.T., Nassar, N. Li, J., & Stanley, F. **Social and racial inequalities in preterm births in Western Australia, 1984 to 2006.** Paediatric and Perinatal Epidemiology 2010, 24, pp 352-362.

Preterm birth is associated with a range of childhood diseases, and is the primary cause of infant mortality in industrialised societies. This study investigated social and racial inequalities in preterm birth among Aboriginal and non-Aboriginal infants in WA. While the overall rates of preterm birth in WA have remained fairly static over the last 20 years, the disparity between Aboriginal and non-Aboriginal infants has increased, with the percentage of preterm births being almost two times higher for Aboriginal infants, compared with non-Aboriginal infants. These findings highlight a major public health issue that should be of great concern, given the diseases and complications associated with preterm birth.

Langridge, A.T., Nassar, N., Li, J., Jacoby, P., & Stanley, F. (2010). **The effect of monetary incentives on birth rates in Australia** (Accepted by the Journal of Epidemiology and Community Health).

There has been widespread international concern about declining fertility rates and the long-term negative consequences, particularly for industrialised countries with aging populations. In an attempt to boost fertility rates, the Australian Government introduced a Maternity Payment, known as the Baby Bonus. However, major concerns were raised that such monetary incentives would attract teens and socially disadvantaged groups. While there was an overall increase in fertility rates, there were no significant differences among maternal age groups, between Aboriginal and non-Aboriginal women, maternal residential locations, or socioeconomic groups. The greatest increase in births was among women residing in the highest socioeconomic areas. Findings suggest that for countries with similar social, economic and political climates to Australia, a monetary incentive may provide a satisfactory solution to declining fertility rates.

O'Donnell, M., Nassar, N., Leonard, H., Mathews, R., Patterson, Y., & Stanley, F. (2009). **Monitoring child abuse and neglect at a population level: Patterns of hospital admissions for maltreatment and assault.** International Journal of Child Abuse and Neglect, In Press. Accepted 1st July 2009.

This study investigated prevalence, trends and characteristics of maltreatment and assault related hospital admissions and deaths among children; and identified common injuries/conditions associated with these admissions. Child characteristics and injuries associated with child assault and maltreatment-related admissions may be used as potential indicators for identifying and monitoring child abuse and neglect. Indicators of assault admissions included injuries of the skull and facial bones, intracranial, wrist, hand and abdominal injuries. Children with maltreatment-related admissions were more likely to have superficial head or abdominal injuries and a high proportion had infectious and parasitic diseases. Assault admissions more than doubled from 1981 to 2005 and maltreatment admissions rose during this time. Males aged >12 years were at greater risk of an assault, while children aged <6 years were more likely to be at risk of maltreatment, as well as those from greater disadvantaged backgrounds. Aboriginal children were more likely to be identified with assault and maltreatment compared to non-Aboriginal children.

O'Donnell, M., Nassar, N., Leonard, H., Jacoby, P., Mathews, R., Patterson, Y., & Stanley, F. (2009). **Rates and types of hospitalisations for children who have subsequent contact with the Child Protection System: A Population Based Case-Control Study.** Journal of Epidemiology and Community Health, online 23/09/2009.

Children with child maltreatment allegations and substantiations had higher mean prior admission rates compared to other children. Higher rates of general admissions and admissions for injuries, infections, mental and behavioural disorders, and external causes of morbidity, were associated with a markedly increased risk of child maltreatment allegations and substantiation. The hospital system plays not only an important role both in the surveillance of maltreatment-related injuries and conditions but also in the role of prevention in the referral of families who may need support and assistance in ensuring the health and safety of their children.

Malacova, E., Li, J., Blair, E., Mattes, E., de Klerk, N., & Stanley, F. **Neighbourhood socioeconomic status and maternal factors at birth as moderators of the association between birth characteristics and school attainment: A population study of children attending government schools in Western Australia,** Journal of Epidemiology and Community Health, 2009, 63(10), pp. 842-849.

This article investigates whether reading and writing skills among children with similar perinatal characteristics differ by neighbourhood socioeconomic status and maternal factors. Having suboptimal growth in utero or an older sibling at birth increases vulnerability to poor literacy attainment especially among children born to single mothers or those in disadvantaged neighbourhoods, providing evidence for

advocating lifestyles compatible with optimum fetal growth and socioeconomic conditions conducive to healthy lifestyles, particularly during pregnancy.

O'Donnell, M., Nassar, N., Leonard, H., Jacoby, P., Mathews, R., Patterson, Y., & Stanley, F. (2010). **Characteristics of non-Aboriginal and Aboriginal children and families with substantiated child maltreatment: A population based study.** *International Journal of Epidemiology*, accepted 8 Jan 2010. A number of child and parental factors increase the risk of substantiated child maltreatment. The strongest factors are child intellectual disability, parental socio-economic status, parental age and parental hospital admissions related to mental health, substance use and assault. Awareness of the factors that make children and families vulnerable may aid the targeting of child maltreatment prevention programmes.

O'Donnell, M., Nassar, N., Leonard, H. M., Mathews, R. P., Patterson, Y. G., & Stanley, F. J. (2010). **The use of cross-jurisdictional population data to investigate health indicators of child maltreatment,** *Med J Aust* 2010; 193 (3): 142-145.

This study determined the proportion of children with a hospital admission related to assault or maltreatment or with a notified sexually transmitted infection (STI) that have contact with the WA Department for Child Protection (DCP), and the injuries and conditions associated with child maltreatment and subsequent contact with the DCP. Most children admitted for maltreatment-related reasons had contact with the DCP. Specific conditions associated with children who had greater contact with the DCP included retinal haemorrhage, rib fractures, multiple injuries, STIs at under 14 years of age, and malnourishment. The health system effectively identifies and notifies real cases of maltreatment, with health information playing an important role in improving maltreatment surveillance by providing opportunities to monitor conditions and injuries associated with child maltreatment.

O'Donnell, M., Nassar, N., Leonard, H., Hagan, R., Mathews, R., Patterson, Y., & Stanley, F. (2009). **Increasing prevalence of neonatal withdrawal syndrome: Maternal risk factors, involvement with child protection and possibilities for prevention.** *Paediatrics*, 123, 614-621

Illicit drug use during pregnancy is an important public health issue, with adverse effects on the newborn and implications for subsequent parenting. The aim of this study was to measure birth prevalence of neonatal withdrawal syndrome (NWS) over time, associated maternal characteristics and child protection involvement. There has been a marked increase in the birth prevalence of NWS, plateauing after 2002. Mothers with a previous mental health admission, low skill level, Aboriginal status or who smoked during pregnancy were significantly more likely to have an infant with NWS. These infants were at greater risk for having a substantiated child maltreatment allegation and entering foster care. Increased risk for maltreatment was associated with mothers who were aged <30 years, were from socially disadvantaged backgrounds, Aboriginal status, and had a mental health- or assault-related admission. Identified maternal characteristics should facilitate planning for early identification and intervention for these women. Findings demonstrate an important pathway into child maltreatment and highlight the need for well-supported programs for women who use illicit drugs during pregnancy as well as the need for sustained long-term support after birth.

O'Donnell, M., Scott, D., & Stanley, F. (2009). **Author's response to letter regarding a public health approach to child abuse and neglect.** *Australian and New Zealand Journal of Public Health*, 33(2), 195-196.

The valuing of children in a culture is at the core of preventing child abuse and neglect and there are complex tensions between societal valuing of family privacy and the use of the State's powers to protect children. Some population based strategies which are likely to reduce child abuse and neglect include increasing breastfeeding, reducing close spacing between births, home visiting programs for at-risk families, reducing the availability of child pornography, improving respite for families with children who have physical/behavioural disabilities and conditions, reducing the level of adult alcohol misuse by a range of whole community interventions, etc. Using public health research methods to investigate the characteristics of families and children at risk, as well as factors that protect children from maltreatment, will inform our efforts to target prevention and intervention programs. We welcome the debate around interventions and the research required to underpin prevention of child abuse and neglect, particularly around any new approaches which will enhance the chances of success.

PhD Theses

Langridge, A. T., Li, J., Nassar, N., Codde, J., Zubrick, S., & Devadason, S. (2009) **Social and racial inequalities in birth rates and infant outcomes in Western Australia.**

Malacova, E. de Klerk, N., Li, J., Blair, E., & Leonard, H. (2009) **Developmental pathways to childhood literacy and numeracy: the role of early health.**

O'Donnell, M., Nassar, N., Leonard, H., Mathews, R., Patterson, Y., & Stanley, F. (2009). **Towards prevention – A public health approach to child abuse and neglect: health indicators and the identification of antecedent causal pathways.**

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