



The West Australian Developmental Pathways Project: Can joined-up data lead to joined-up thinking?

MCHP 20th Anniversary Conference

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Chair, Australian Research Alliance for Children and Youth

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Population of Western Australia:
2.2 Million

Population of Australia:
22 Million



Outline

1. Rationale for joined-up thinking
2. The Developmental Pathways Project (DPP)
3. Has the DPP encouraged joined-up thinking?
4. Future of DPP and similar activities



1. Rationale for joined-up thinking

Wicked Problems

- Are socially complex with multiple layers of stakeholders
- Are difficult to clearly define, and there is often disagreement about the cause
- Have no clear or correct solution
- Are interdependent and often multi-causal
- Defy conventional approaches to problem solving
- Are cross-cutting, do not fit into organisational boundaries
- Are beyond the capacity of any one organisation or sector to respond to effectively

Societal Challenges

Poor Health and Wellbeing

- Low birth weight
- Complex diseases (asthma, diabetes, obesity)
- Mental ill health
- Substance abuse - FAS
- Teenage pregnancy
- Disabilities

Social Dis-ease

- Child abuse/ domestic violence
- Behavioural problems/ unrest
- Educational problems
- Juvenile crime
- Workplace stress
- social human capital

Environment

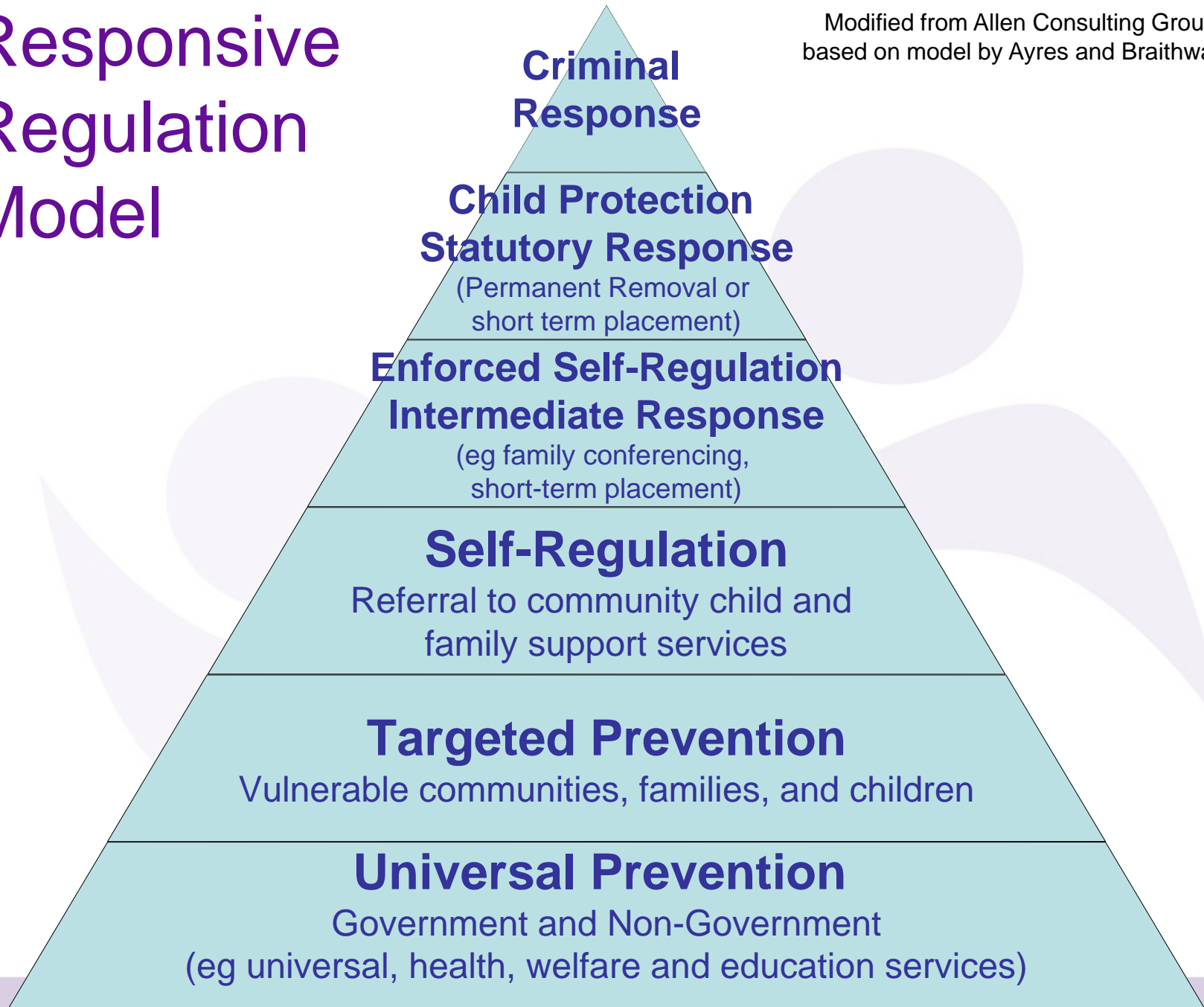
- Climate change
- Environmental Degradation
- Water
- New and emerging infections

Prevention Imperative

1. Level of problems: crisis services not sustainable (health, education, child protection, disability, crime)
2. Many pathways known: but research needed in implementation strategies (eg most public health programs fail those at highest risk)
3. Advocacy for a change of policy focus and workforce capacity across sectors (eg child abuse and neglect, Inverting the Pyramid)
4. Joined up efforts needed across a range of prevention strategies (eg legislation, health promotion, specific services, advertising etc)

Responsive Regulation Model

Modified from Allen Consulting Group, 2003
based on model by Ayres and Braithwaite, 1992



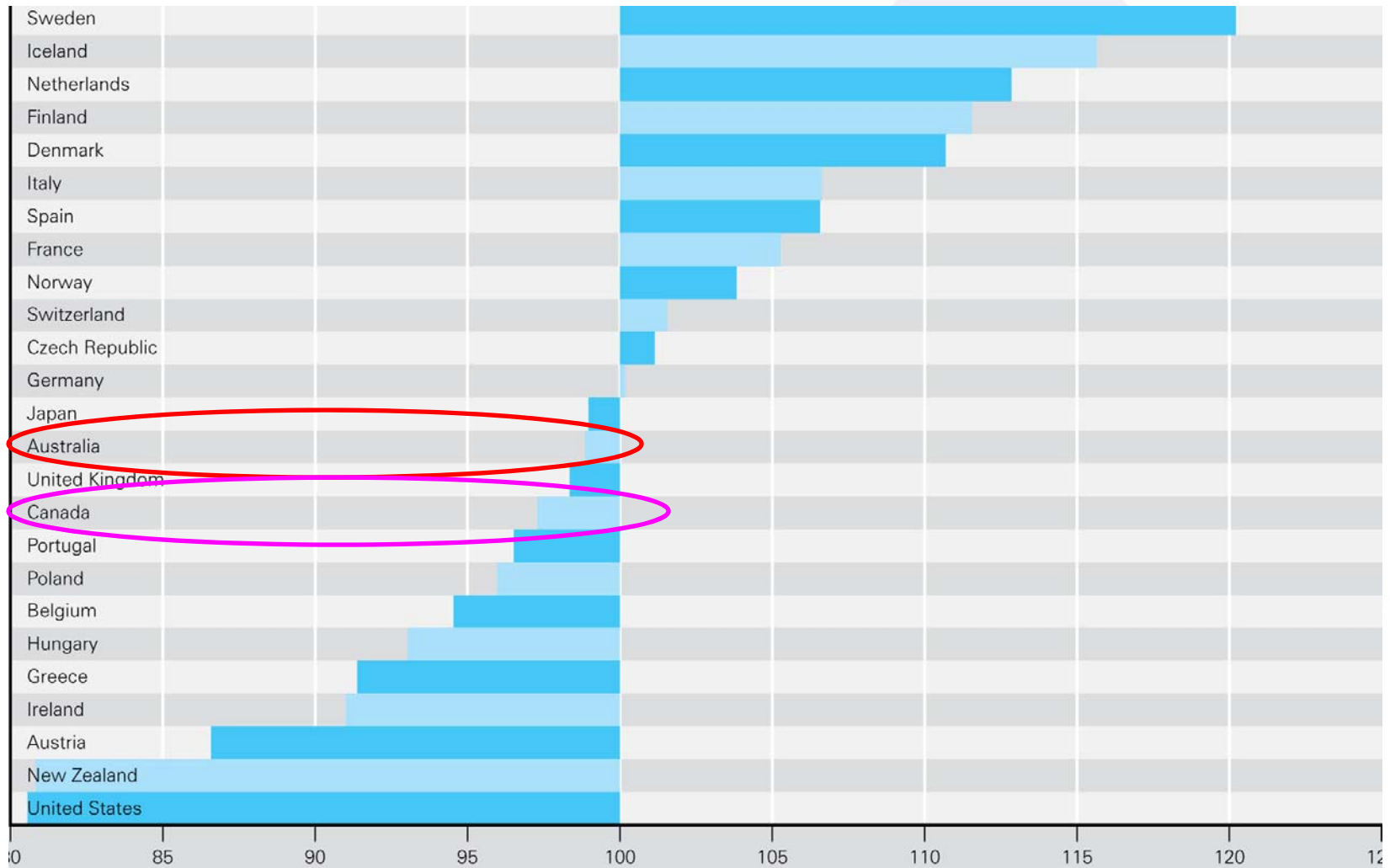
Child Wellbeing in 21 Wealthy Countries (OECD Data)

DIMENSIONS

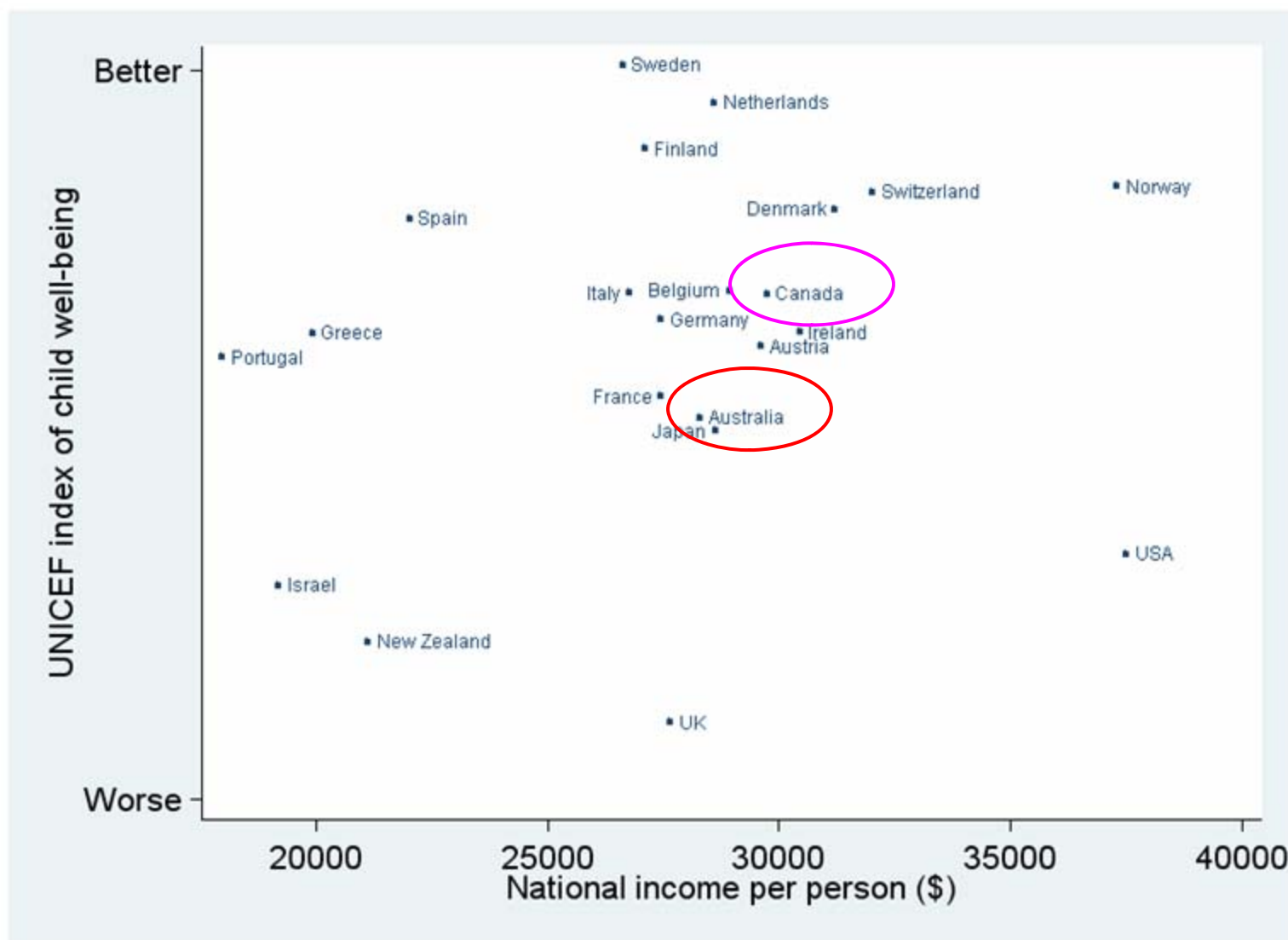
RANKINGS (out of 21)

	<i>CAN</i>	<i>UK</i>	<i>USA</i>	<i>AUS</i>
Material wellbeing	6	18	17	13
Health & safety	13	12	21	14
Educational wellbeing	2	17	12	7
Family & peer relationships	18	21	20	NA
Behaviours & risks	17	21	20	NA
Subjective wellbeing	15	20	NA	NA

Health and Safety



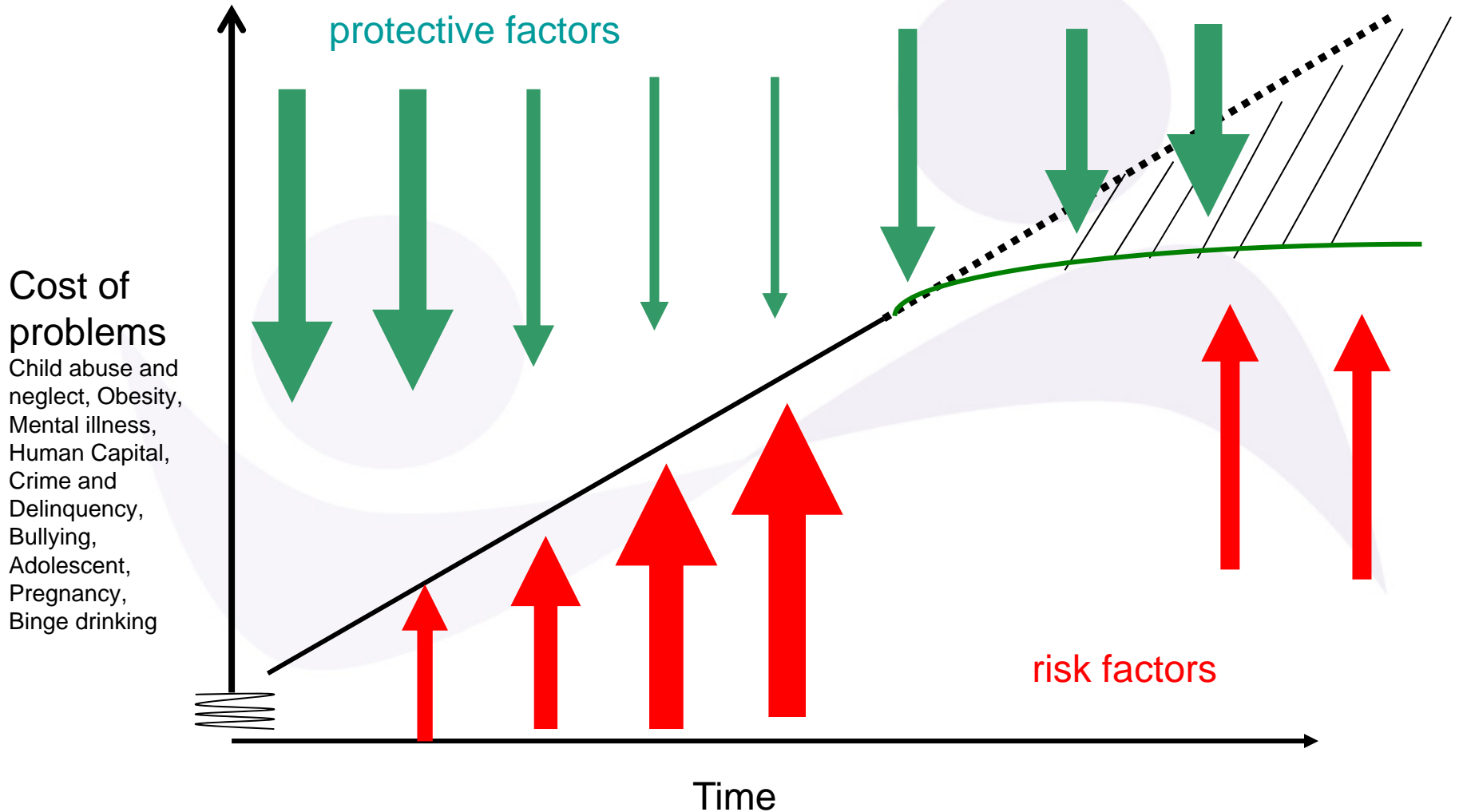
Child-Wellbeing is Unrelated to Average Incomes in Rich Countries



Child Well-being is Better in More Equal Rich Countries

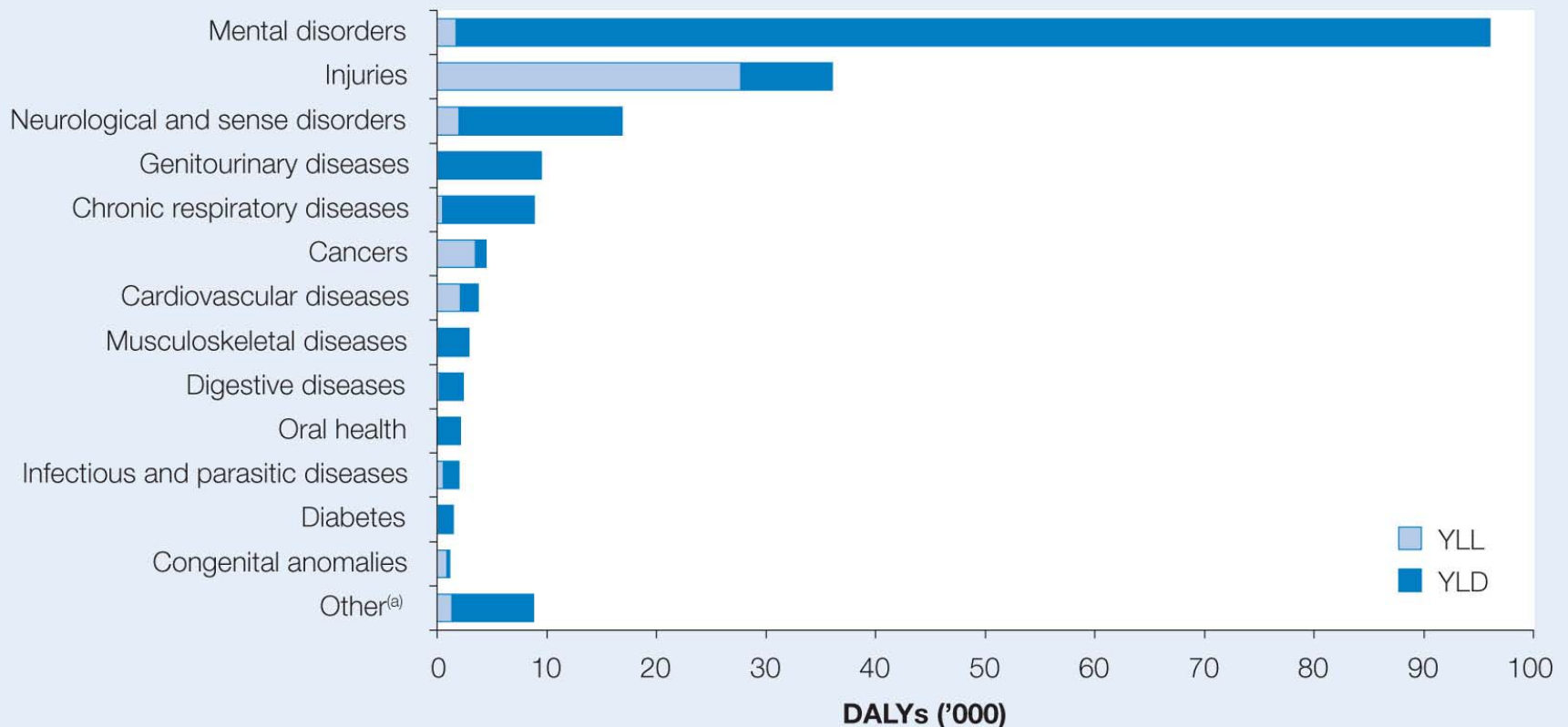


Cost of doing nothing



Relationship between risk factors and protective factors. Shaded area: cost of doing nothing.

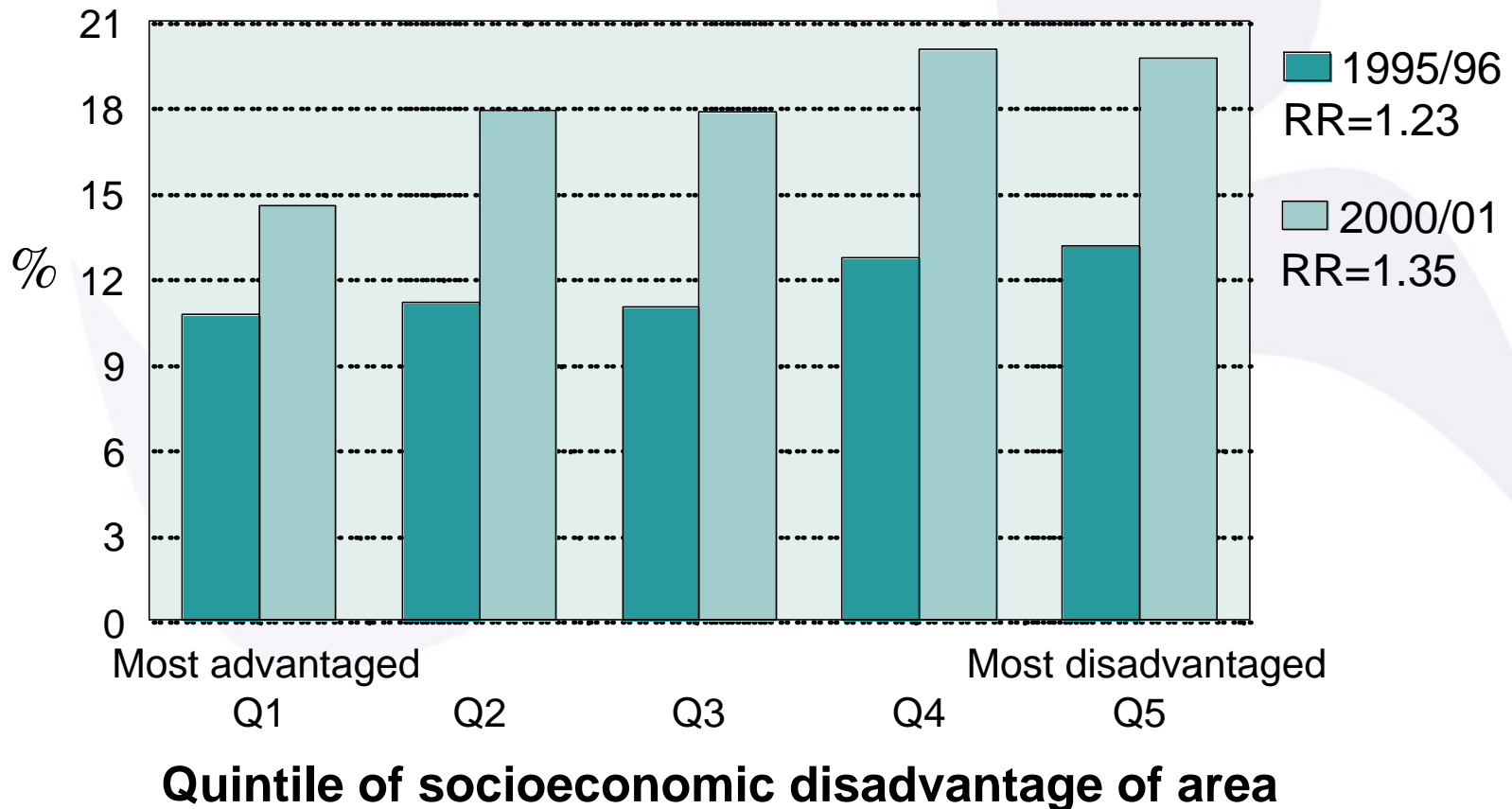
Burden of Major Disease 15-24yo



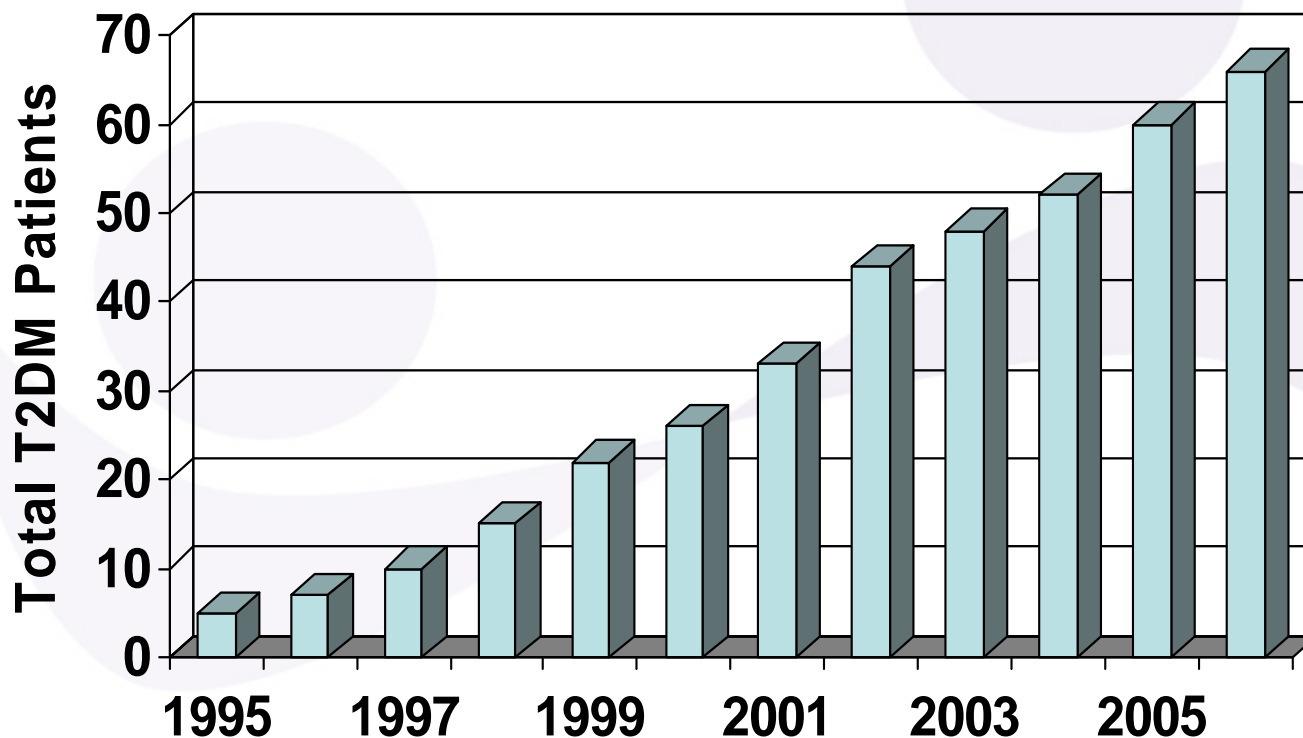
(a) Includes acute respiratory diseases, maternal conditions, nutritional deficiencies, endocrine and metabolic disorders, other neoplasms, skin diseases and ill-defined conditions.

Source: Begg et al. 2007.

Overweight and obese 4 year old children, South Australia, 1995-96 and 2000-01

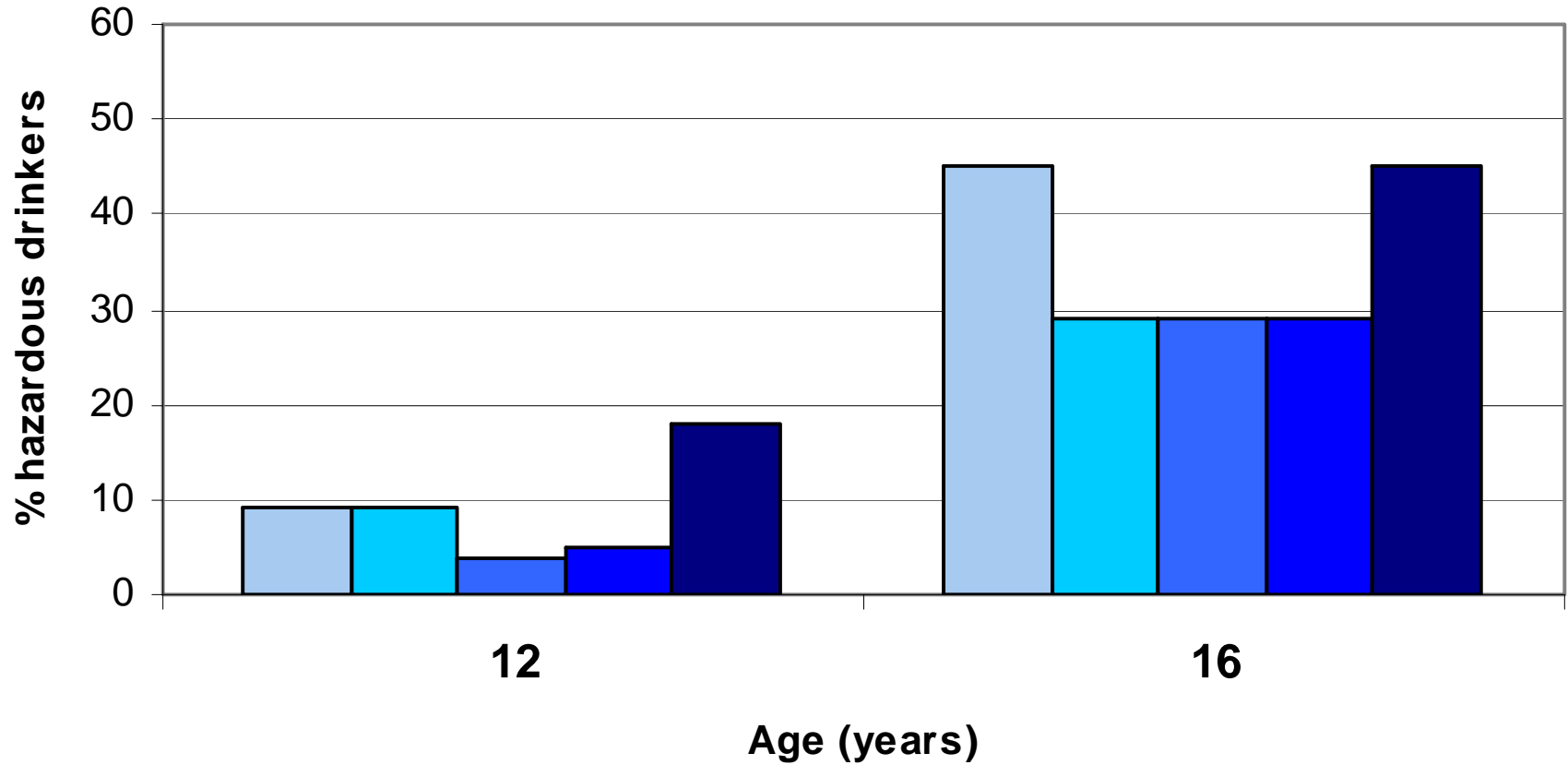


Increasing Type 2 diabetes in children in WA



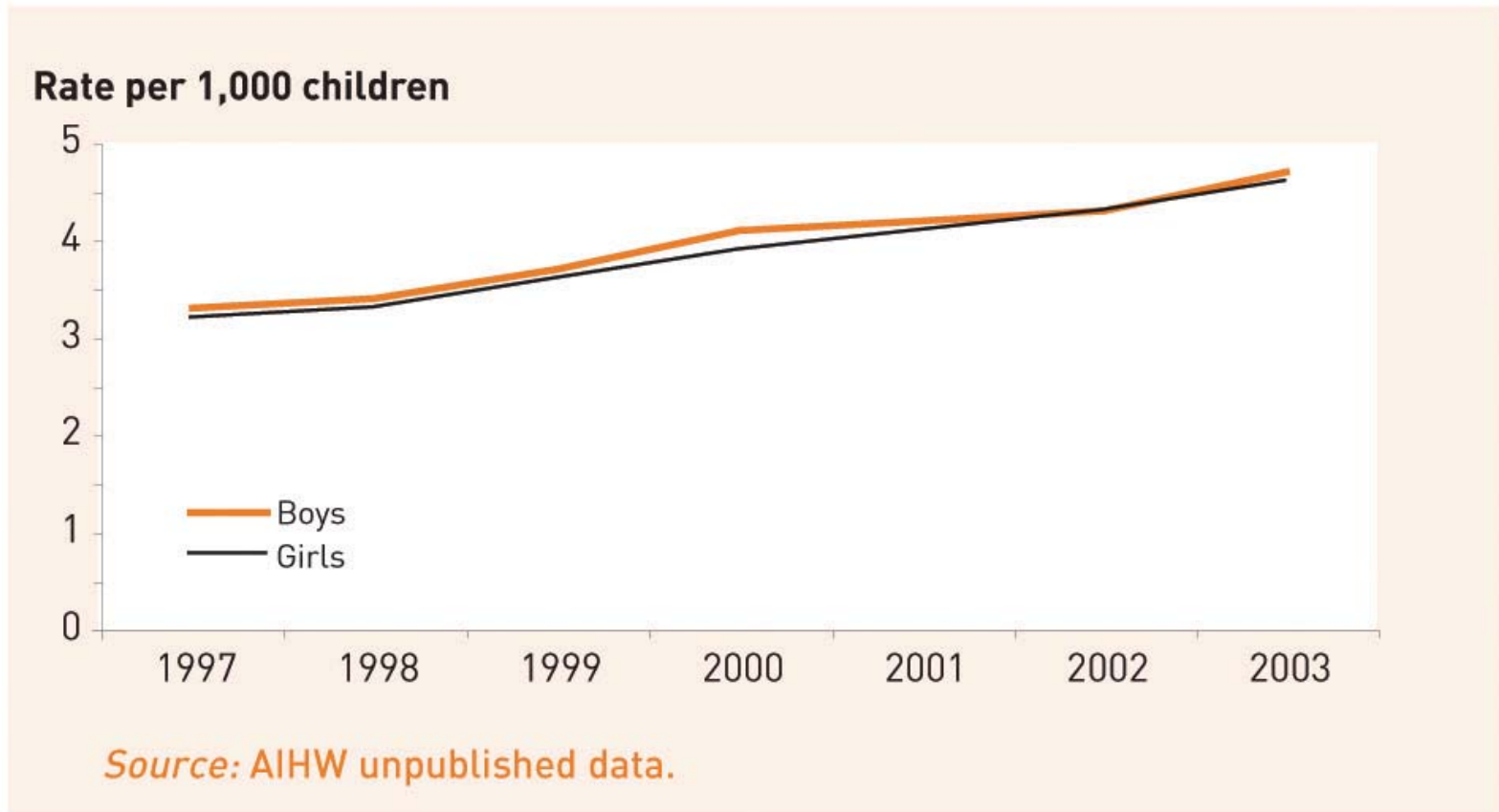
Alcohol Use - Girls

Girls



1983 1986 1989 1992 1996

Figure 17.1: Children aged 0–14 years on care and protection orders at 30 June, 1997–2003 (rate per 1,000 children)



Rationale for Joined-up Thinking: Summary

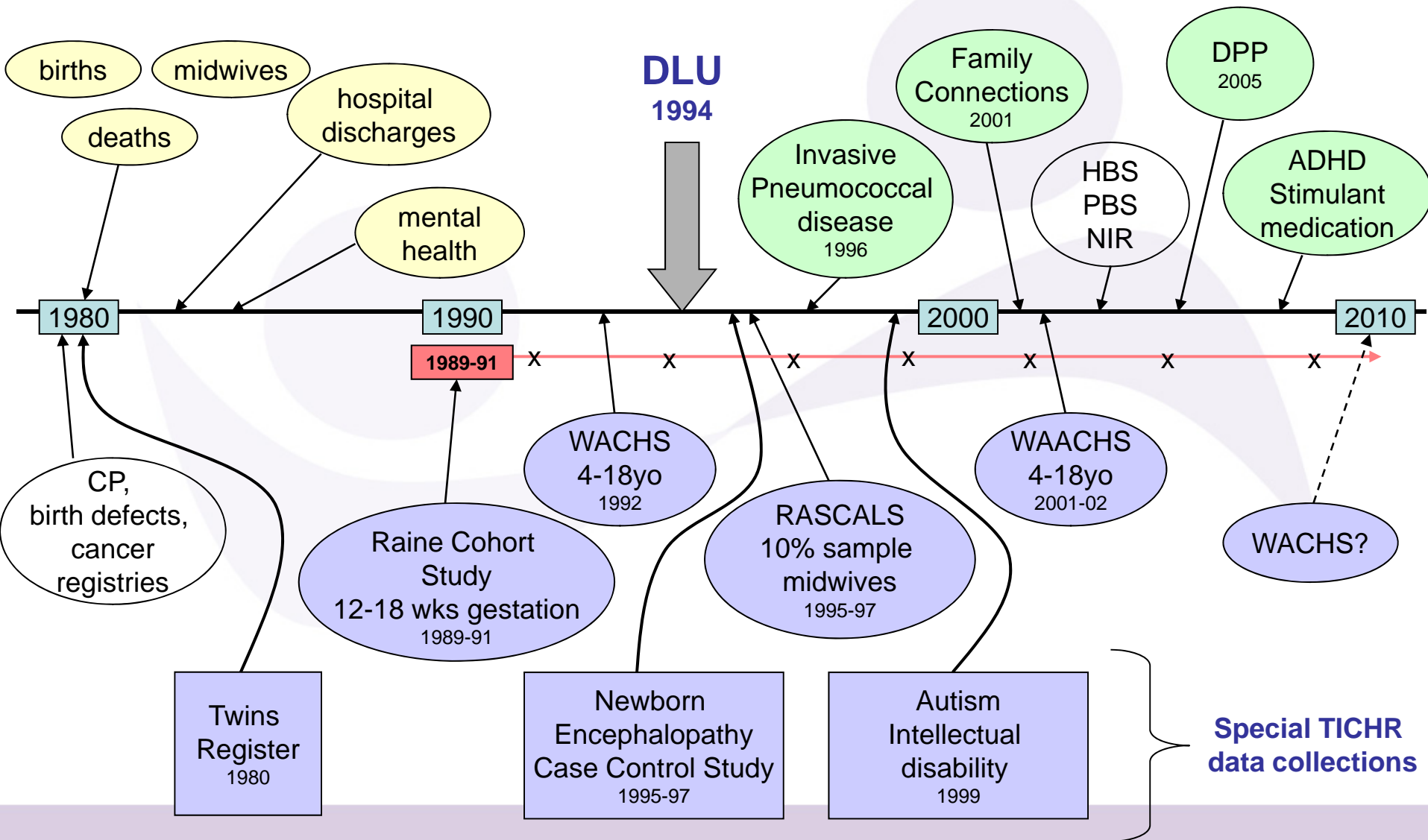
1. Complex problems have multiple causes and demand cross-agency responses
2. Complex problems appear to be increasing (eg in children and youth)
3. Complex problems need to be prevented. Such prevention policies need cross-agency, joined-up thinking
4. Current responses to complex problems focus too late, do not appreciate multiplicity of interacting causal pathways and are developed in increasingly siloed bureaucracies

A stylized purple graphic in the background depicts two human figures from the waist up, facing each other and holding hands. The figures are composed of simple shapes: a circle for the head and a curved, open-bottom shape for the torso. The overall style is minimalist and modern.

2. The West Australian Developmental Pathways Project

Health Record Linkage in Western Australia (TICHR perspective)

Linkage Capacity Total Population Data



WA Data Linkage System

Developmental Pathways Project

Core Health Data Sets

- **Birth Registrations- 1974**
- **Death Registration- 1980**
- **Hospital Separations- 1970**
- **Midwives' Notifications- 1980**
- **Mental Health- 1966**
- **Emergency Records- 2000-2003**
- **Marriage Records- 1984**
- **Electoral Roll Records- 1988-**

Commonwealth Data Systems

- **Medical Benefits Scheme, 1984+**
- **Pharmaceutical Benefits Scheme, 2002+**
- **Childhood Immunisation Register**
- **Aged Care, 1993+**

DPP Links

Dept for Child Protection- from 1994 (150,000 records)

Dept of Education and Training- From 1999 (530,000 records)

Disability Services Commission (from 1983) and IDEA database (from 1999)

Dept of Corrective Services - from 1980

Department of Health-sexually transmitted diseases

WA Police*-

Dept of the Attorney General*-

Master Links File



Australian Government
Australian Research Council



THE UNIVERSITY OF WESTERN AUSTRALIA

THE DEVELOPMENTAL PATHWAYS PROJECT

Telethon Institute for Child Health Research
Crime Research Centre at the University of WA
Department of Health
Department for Child Protection
Department for Communities (Office for Youth)
Department of Education and Training
Department of Corrective Services
Disability Services Commission
Department of the Attorney General
WA Police
Department of Treasury and Finance
Department of Indigenous Affairs
Department of Premier and Cabinet



Social Determinants

Changing socioeconomic inequalities in neonate, infant and child health and development

Child Protection

Child abuse and neglect:
Measurement and pathways to prevention

Effects of Child Maltreatment on Developmental pathways to Mental Health, Suicidal Behaviour and Suicide.

Education

Child literacy and numeracy:
Developmental pathways and the role of early health

Juvenile Delinquency

Prevalence and frequency of offending and the influence of individual, family and community factors on delinquency

Pathways to contact with Juvenile Justice in Aboriginal and Torres Strait Islander Children; developing a profile for the risk and protective factors

Aboriginal

How Aboriginal and White Western Australians see themselves, each other and the effect of these perceptions on service provision and utilisation

Stimulant Medication

Investigate outcomes of children and young adults who have been prescribed stimulant medication for Attention Deficit Disorder in Western Australia



Mental Health

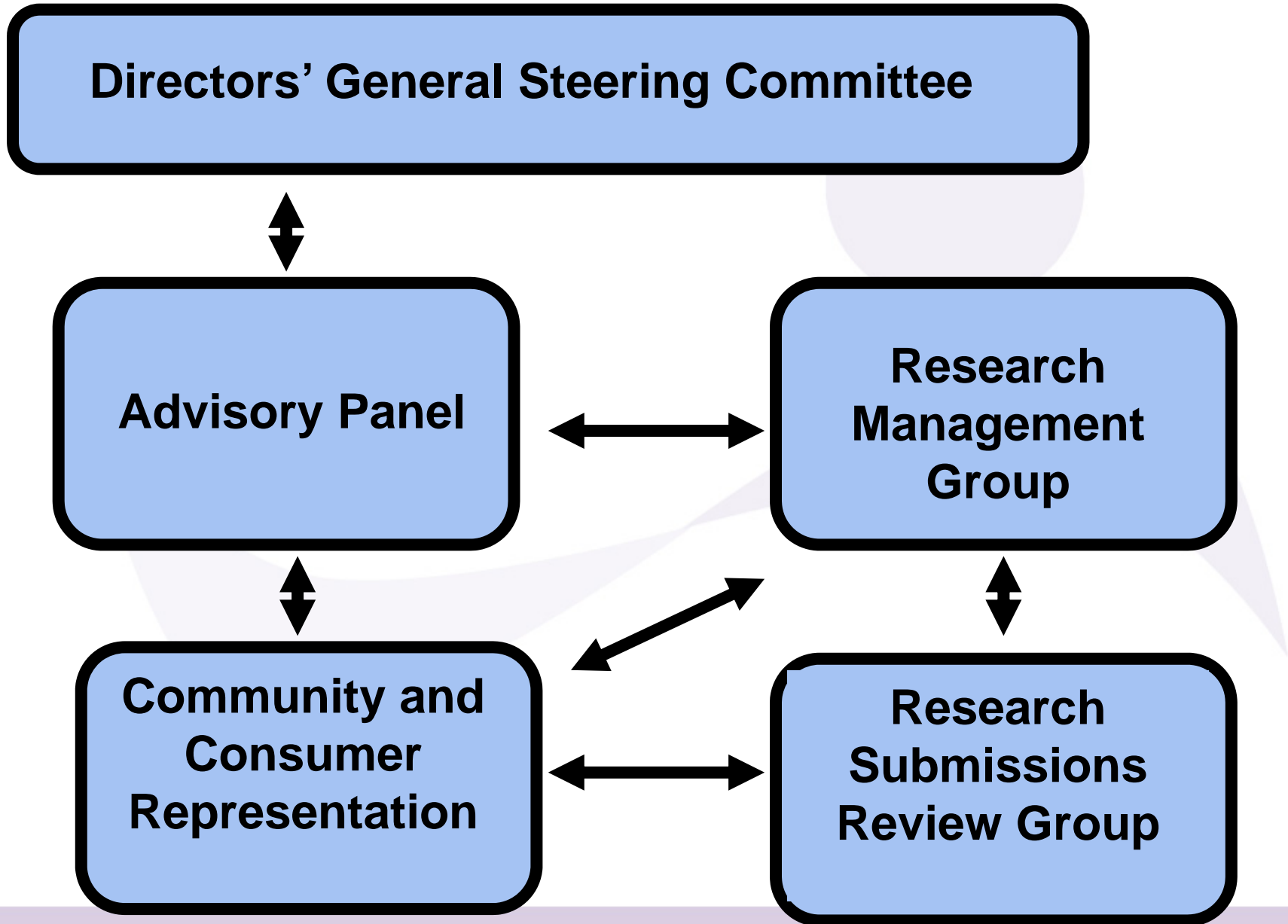
Pathways Of Risk From Conception
To Disease: A Population-Based
Study Of The Offspring Of Women
With Bipolar Disorder And
Schizophrenia

Early risk factors for anxiety and
personality disorders

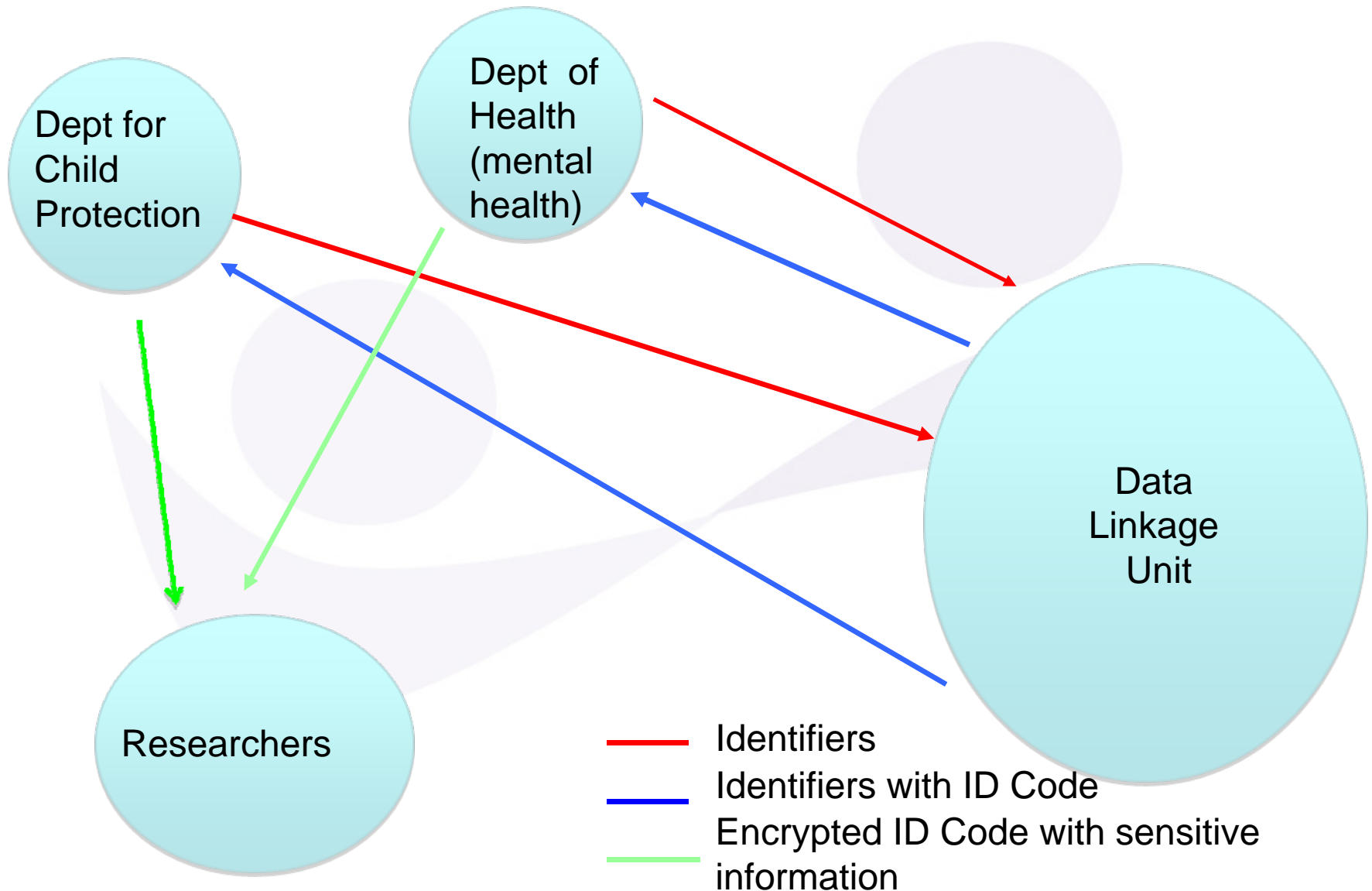
Offending
Behaviour

Traumatic Brain Injury and
offending behaviour

Governance Structure



The Data Linkage System



Geographical Information Systems (GIS) Mapping

- Identify “hot spots” for service needs
- Identify “hot spots” for service use
- Allows for the identification of discrepancies between need and availability of services.
- Increases the ability to effectively target areas
- Leads to better use of resources



3. Has the DPP encouraged
joined-up thinking?

Progress in the first 5 Years

- All projects initiated by researchers
- Agency/policy makers acted as
 - Data custodians
 - Expert supervisors
- Increasing engagement and enthusiasm
- Some policy frameworks influenced by DPP analyses (policy briefs, national frameworks)
- DG's group now starting to set the analytical agenda
- Increasing Government support for DPP (funding, more agencies)

Examples of Linked-up Projects

1. Early birth, social and health influences on educational outcomes (Malacova)
2. Public health approach to child maltreatment (O'Donnell)
3. Changing socio-economic inequalities: impact on births, child health and development (Langridge)



Developmental Pathways into Education

Linked de-identified Data



- Midwives Notifications (1990-1997)
 - WA Literacy and Numeracy (1999-2005)
 - Hospital Separations
 - Mental Health
 - WA Census data (1991, 1996)
- 

Child, Family and Community Characteristics

LITERACY and NUMERACY

Child Level

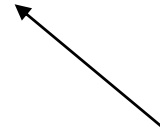
Prematurity
Low Birth Weight
Birth Defects
Age
Hospital Admissions

Family Level

Mother's Age
Parental Occupation
Parental Place of Birth
Family Structure
Parental Mental Health

Community Level

Neighbourhood Environment
School Environment
School Geographical Location

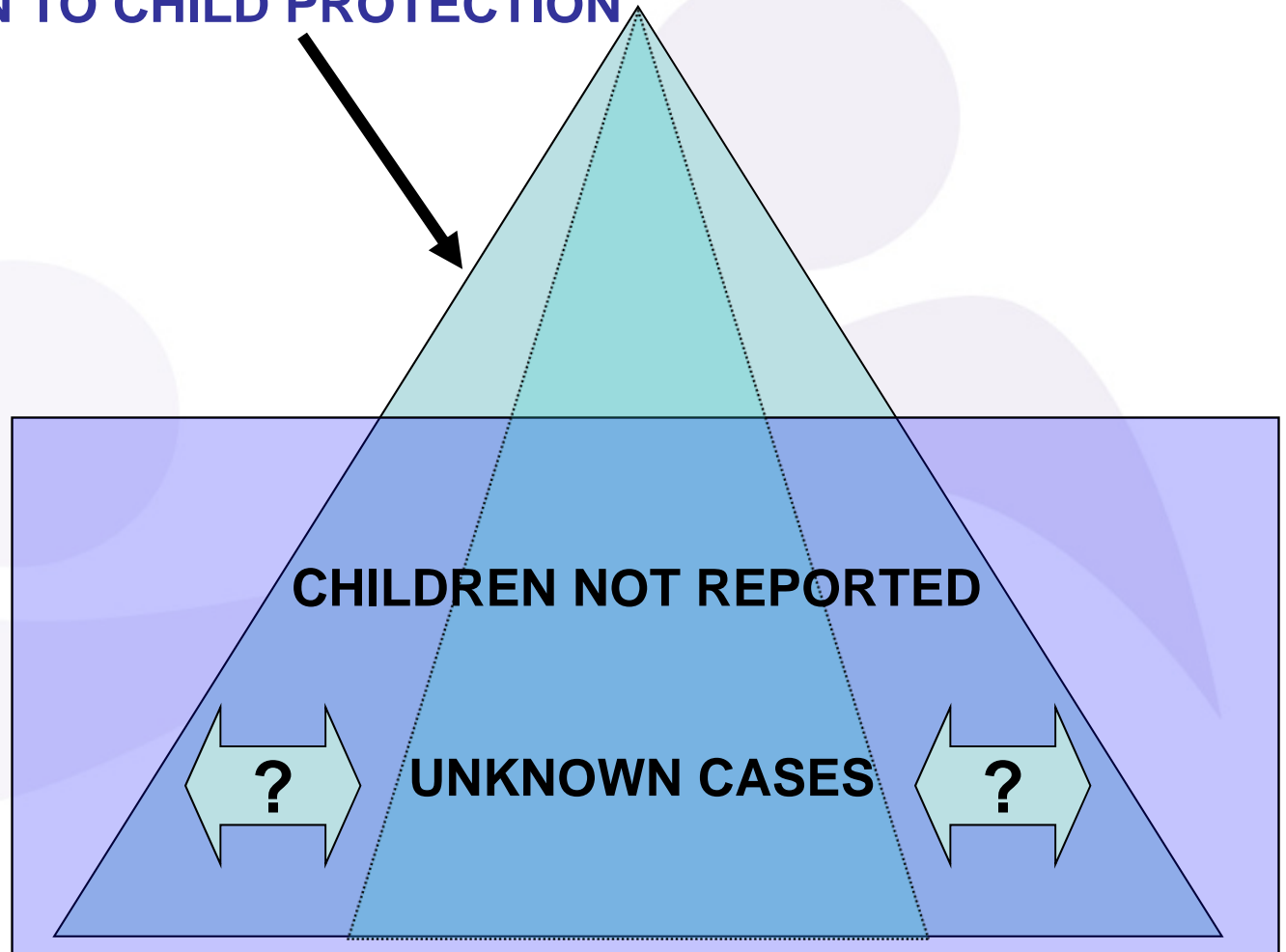


A stylized purple graphic in the background depicts two human figures. The figure on the left is smaller and appears to be holding the hand of the larger figure on the right. The figures are composed of simple shapes: circles for heads and broad, curved shapes for bodies and limbs. The overall tone is light purple.

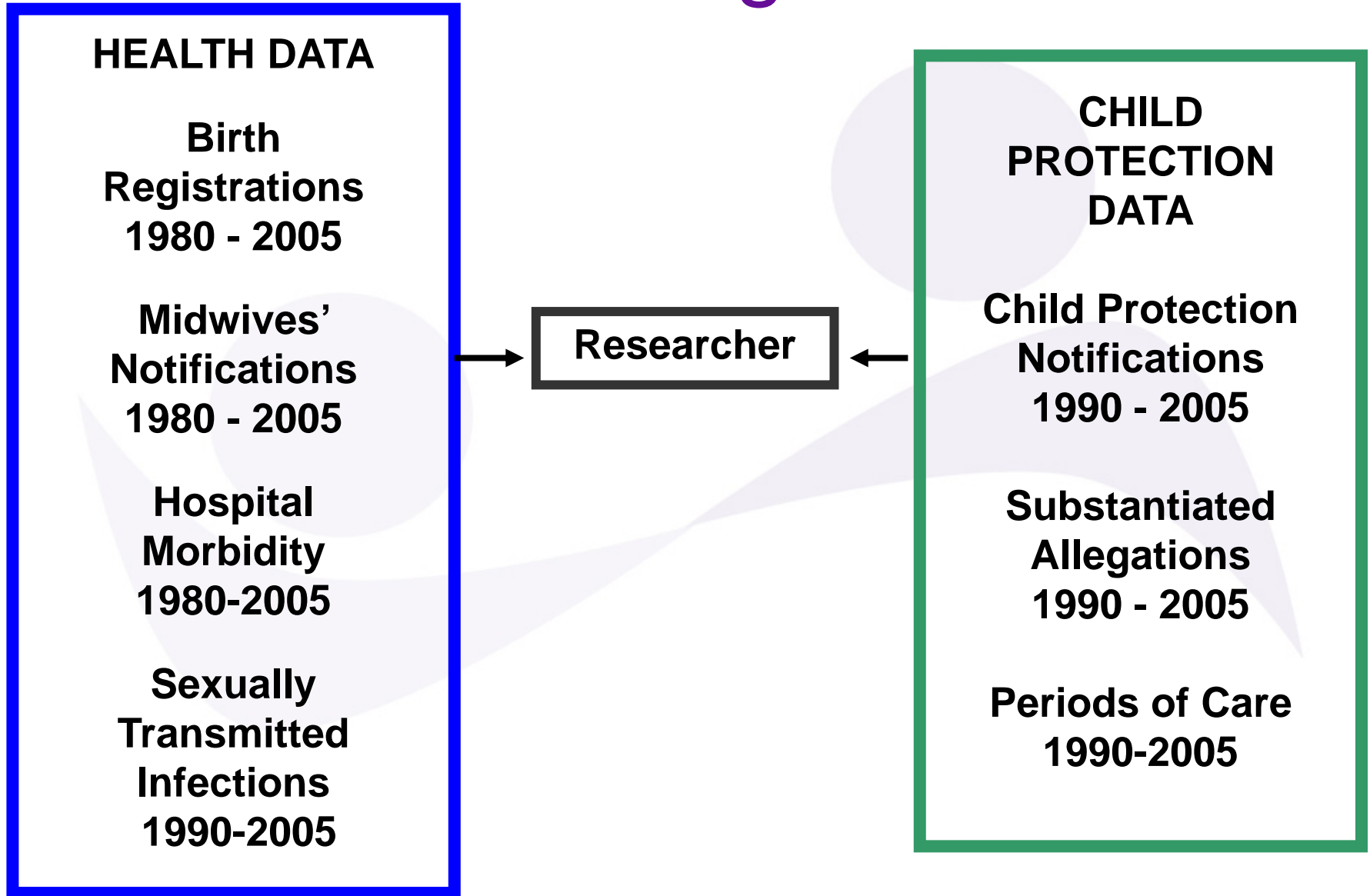
Developmental Pathways into Child Maltreatment

Iceberg of Child Maltreatment

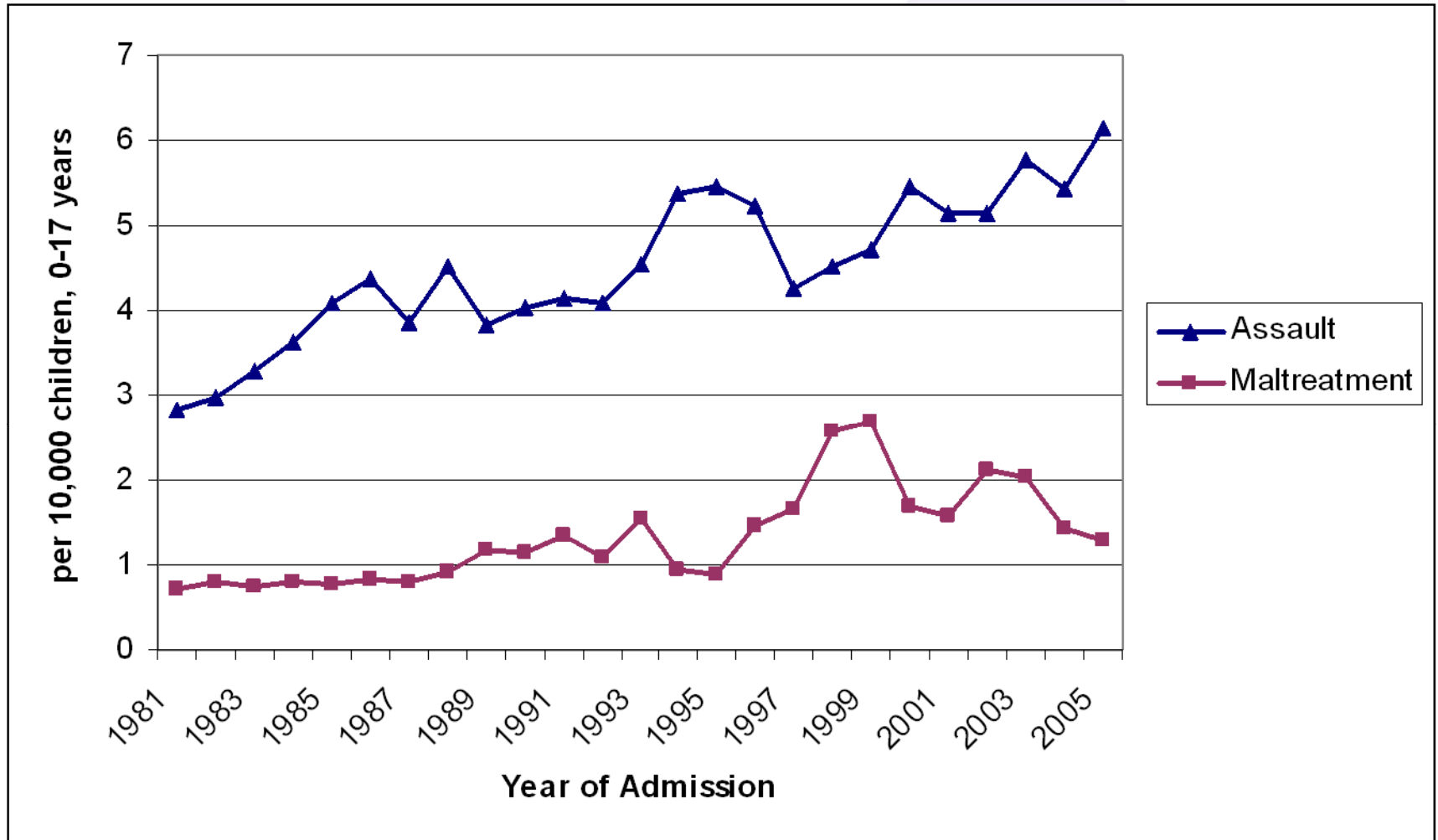
CHILDREN KNOWN TO CHILD PROTECTION



Linkage



Trends in Admissions



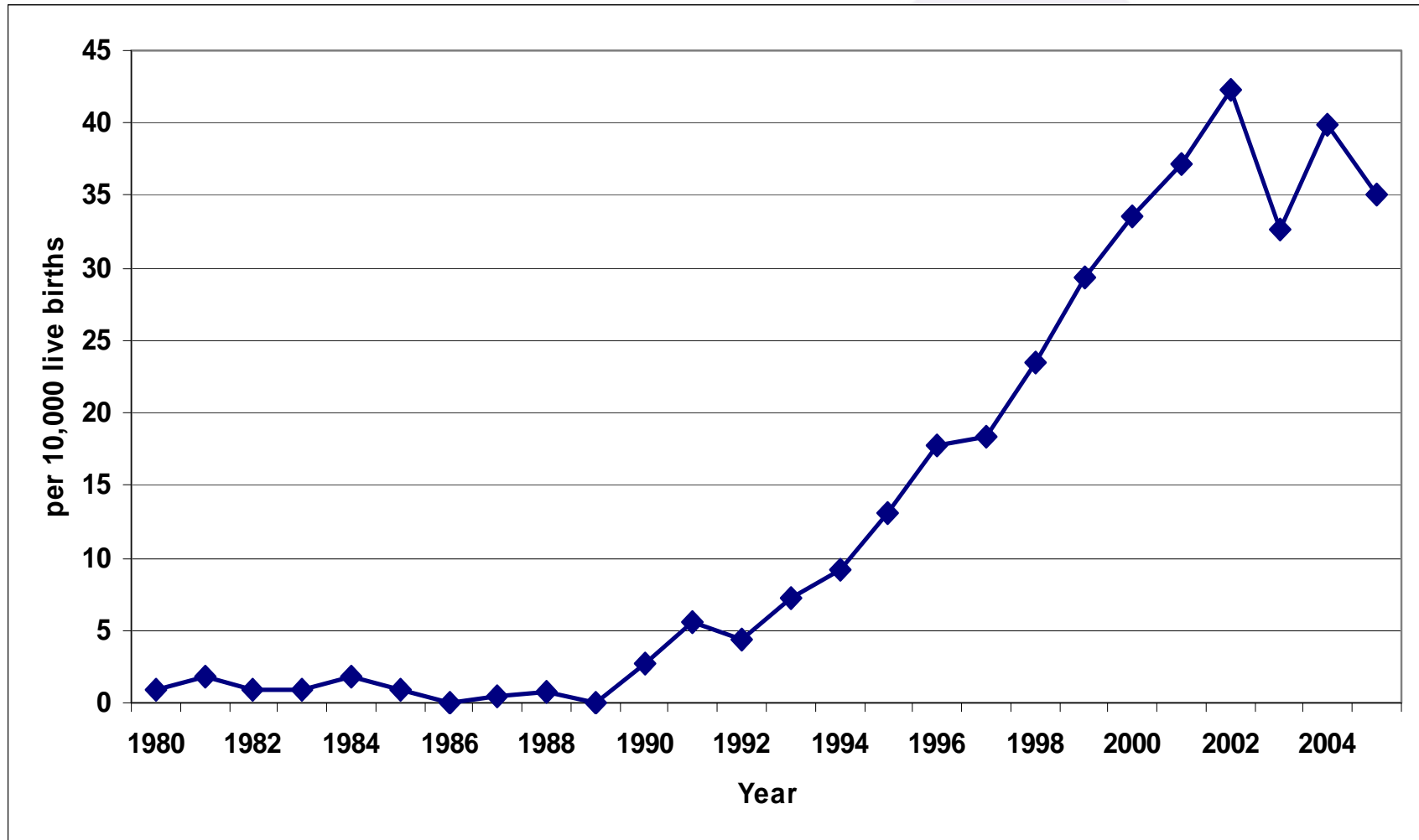
Findings

- Increase in maltreatment and assault admissions
- Specific injuries – potential indicators
- Majority are being reported
- High proportion substantiated and entering care.

Neonatal Withdrawal Syndrome (NWS)

High pitched crying	Poor feeding
Tremor/jittering	Uncoordinated sucking
Irritability	Vomiting and Diarrhoea
Increased muscle tone	Poor weight gain

Birth Prevalence of NWS

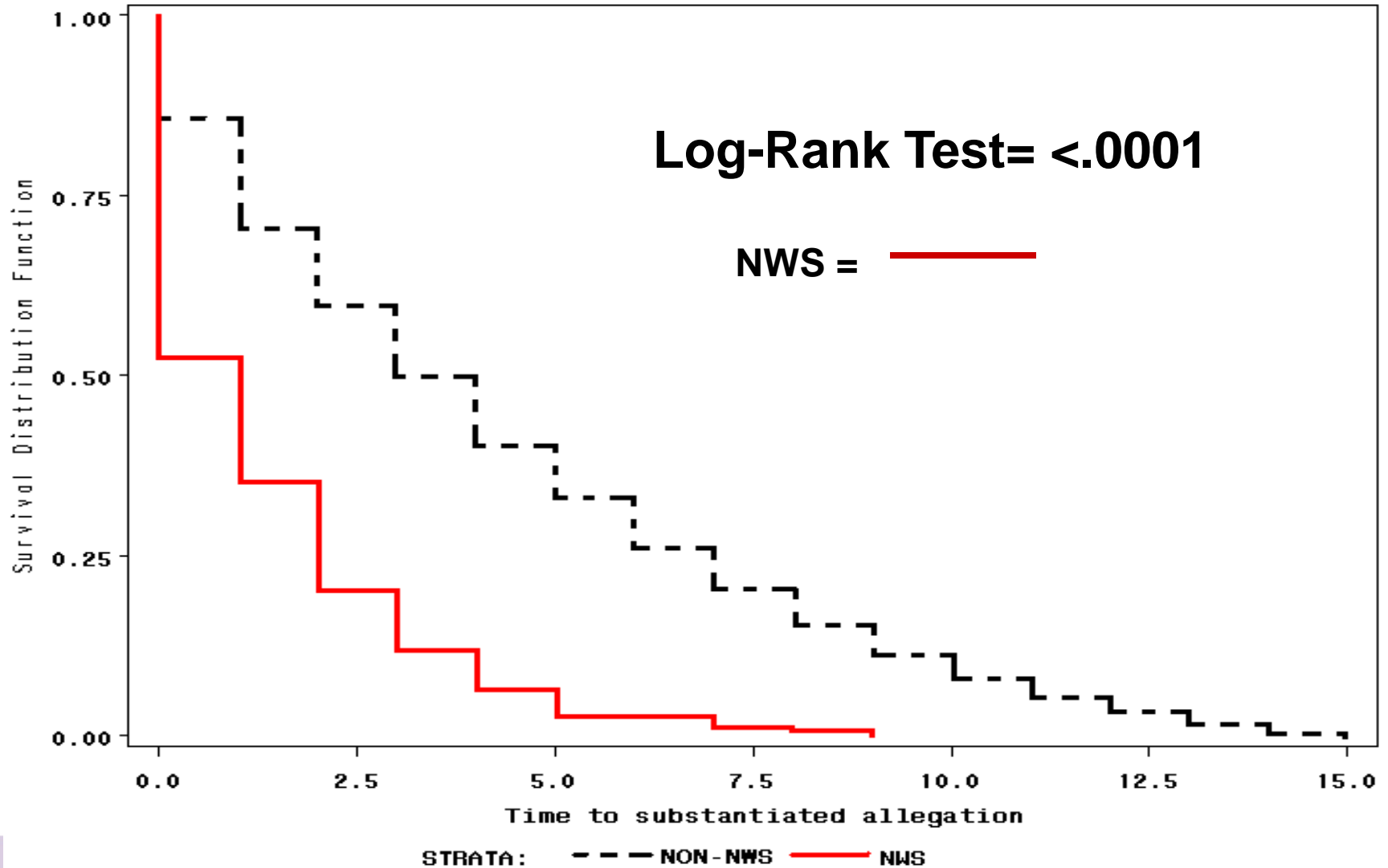


Non- Aboriginal Maternal Risk Factors for NWS

Risk factor	Multivariate OR (CI)*
Skill level : Not Classifiable	1.7 (1.1 - 2.5)
Bachelor Degree or Higher	Reference Group
Assoc Degree/ Diploma	1.7 (1.0 - 2.9)
Certificate 4 or 3 yrs exp	1.8 (1.1 - 3.0)
Certificate 2/3 or 1 yr exp	2.0 (1.3 - 3.0)
Secondary Education	1.6 (1.0 - 2.5)
Prior Mental Health Admission	24.6 (19.5 - 30.9)

*Adjusted-maternal age, marital status, previous pregs, smoking, SEIFA, skill level, prior mental health admission

Survival Curve: Time to Substantiated Allegation



A stylized purple graphic in the background depicts two human figures from the waist up, facing each other with their arms raised and hands held together. The figures are composed of simple shapes: circles for heads and curved, open-bottom shapes for bodies. The overall style is minimalist and modern.

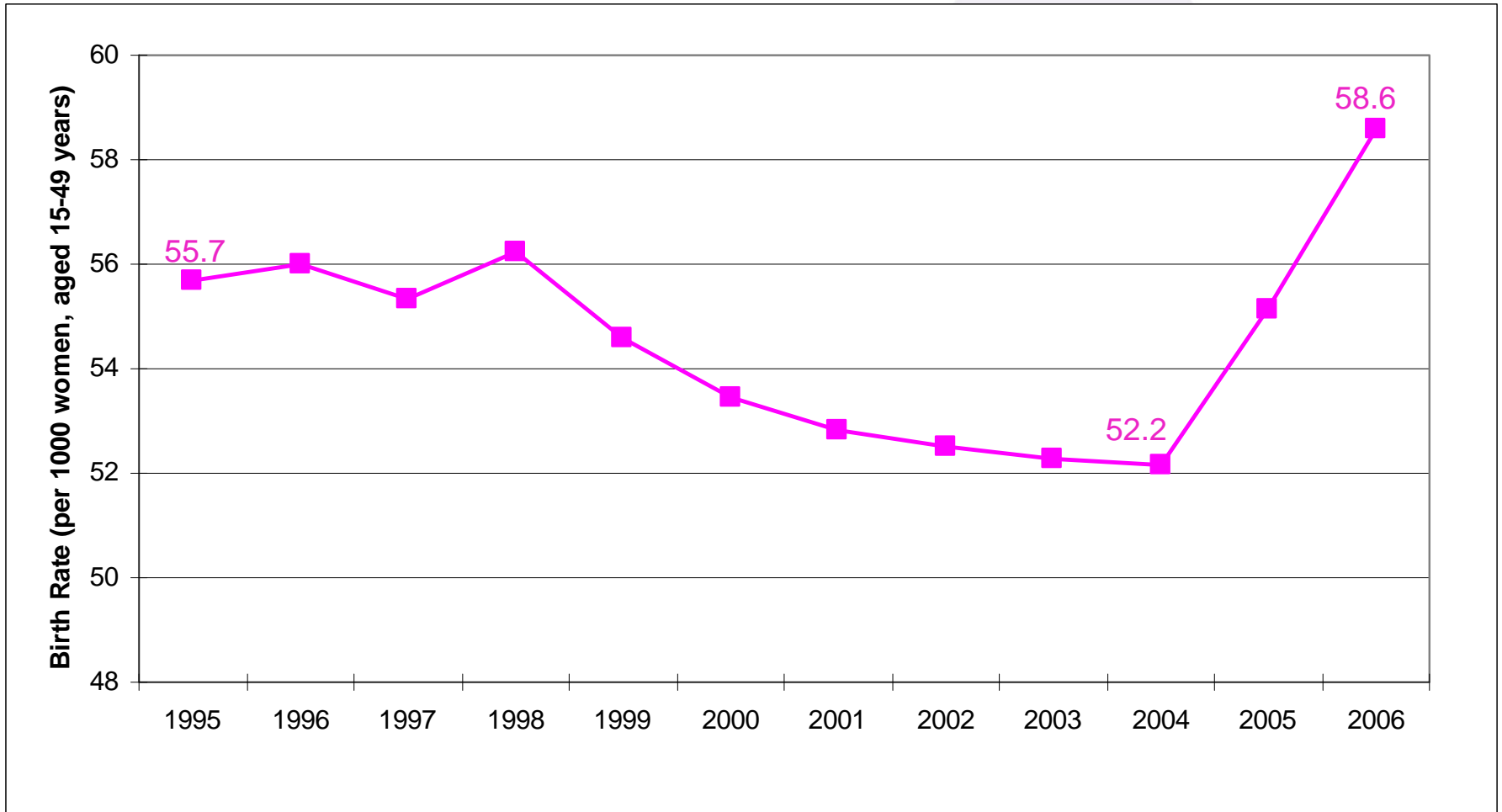
DPP Evaluation of the Government's Baby Bonus

Background – Australia's Fertility Policy



- Maternity Payment (Baby Bonus)
- Announced May 2004
- Introduced July 2004
 - AUD\$3000 (~£1500)
- Significant increase in 2006 and 2008
 - AUD\$5000 (~ £2300)
- One-off payment

Birth Rates in WA



Conclusions

- WA birth rate has increased significantly
- **Not** socially disadvantaged groups
- **Not** teenagers
- Mainly women aged 20-24
- Communities with relatively higher education and occupation status



4. Future of the DPP

Future of the DPP

- Forward planning of outputs by Directors General and Treasury
- New Australian Research Council grant
- ?NHMRC Policy and Partnerships COE
- Continue linkage and analysis
- Model for National Statistical Service

Challenges

A stylized, light purple graphic of a human figure is positioned in the background. It consists of a circular head and a curved, tapering body, rendered in a minimalist, abstract style.

- Funding
- Champions/ staff turnover
- Capacity of agencies
- Additional data (eg qualitative)
- Privacy concerns
- Bureaucratic demands for timely data and evidence
- Data describing policies/ practices

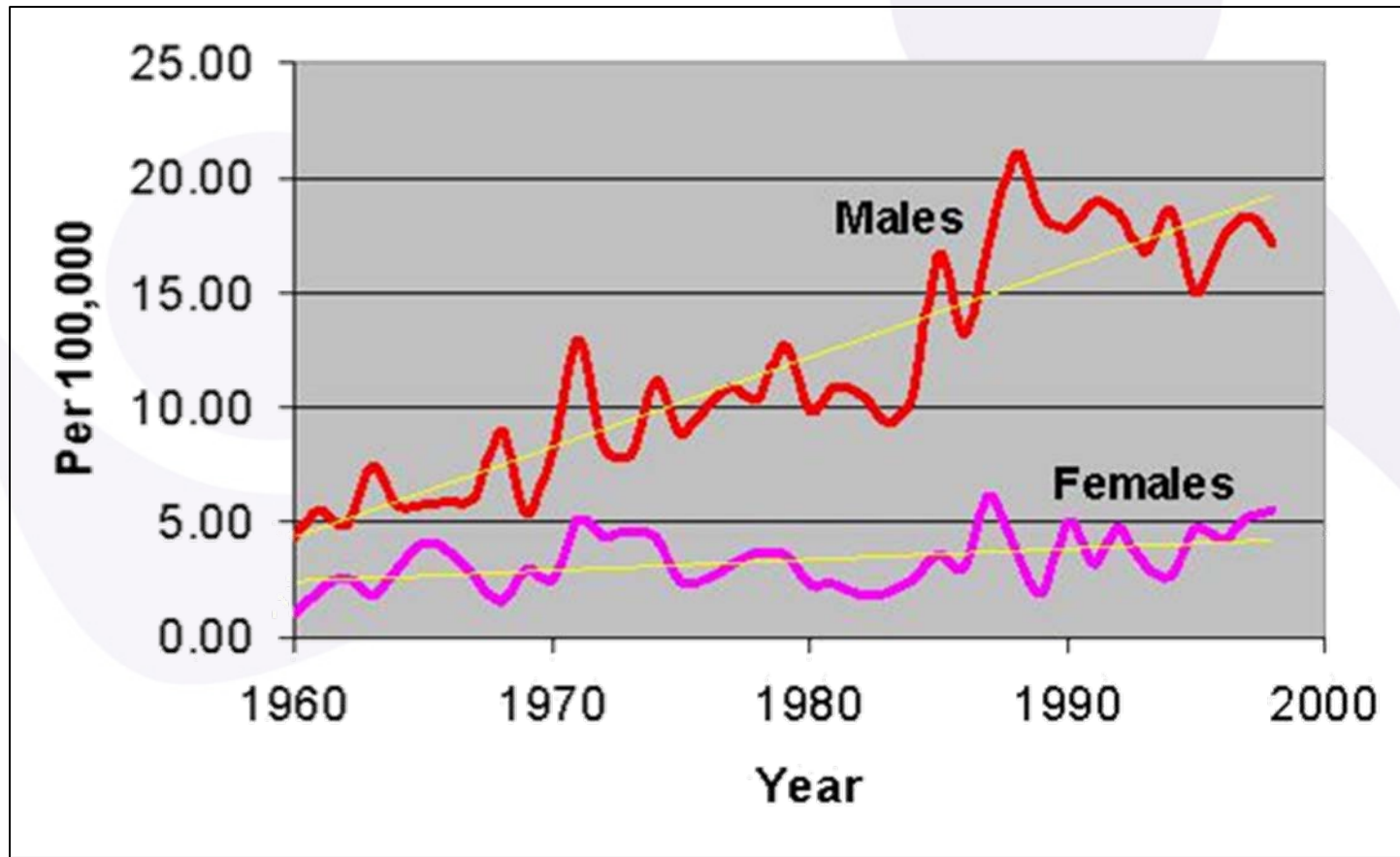
Acknowledgements

- Mike Hobbs, D'Arcy Holman: School of Population Health, UWA
- Populations Sciences: TICHR
- Data Linkage Unit: Department of Health
- All the Directors General and Agency partners
- Specifically: Di Rosman, Carol Garfield, Rebecca Glauert, Erika Hagerman, Nick de Klerk, Jianghong Li, Natasha Nassar, Eve Blair, Helen Leonard,
- Melissa O'Donnell, Amanda Langridge, Eva Malacova (all postdocs now)
- Funding: NHMRC, ARC, TICHR, WA Gov, DLA

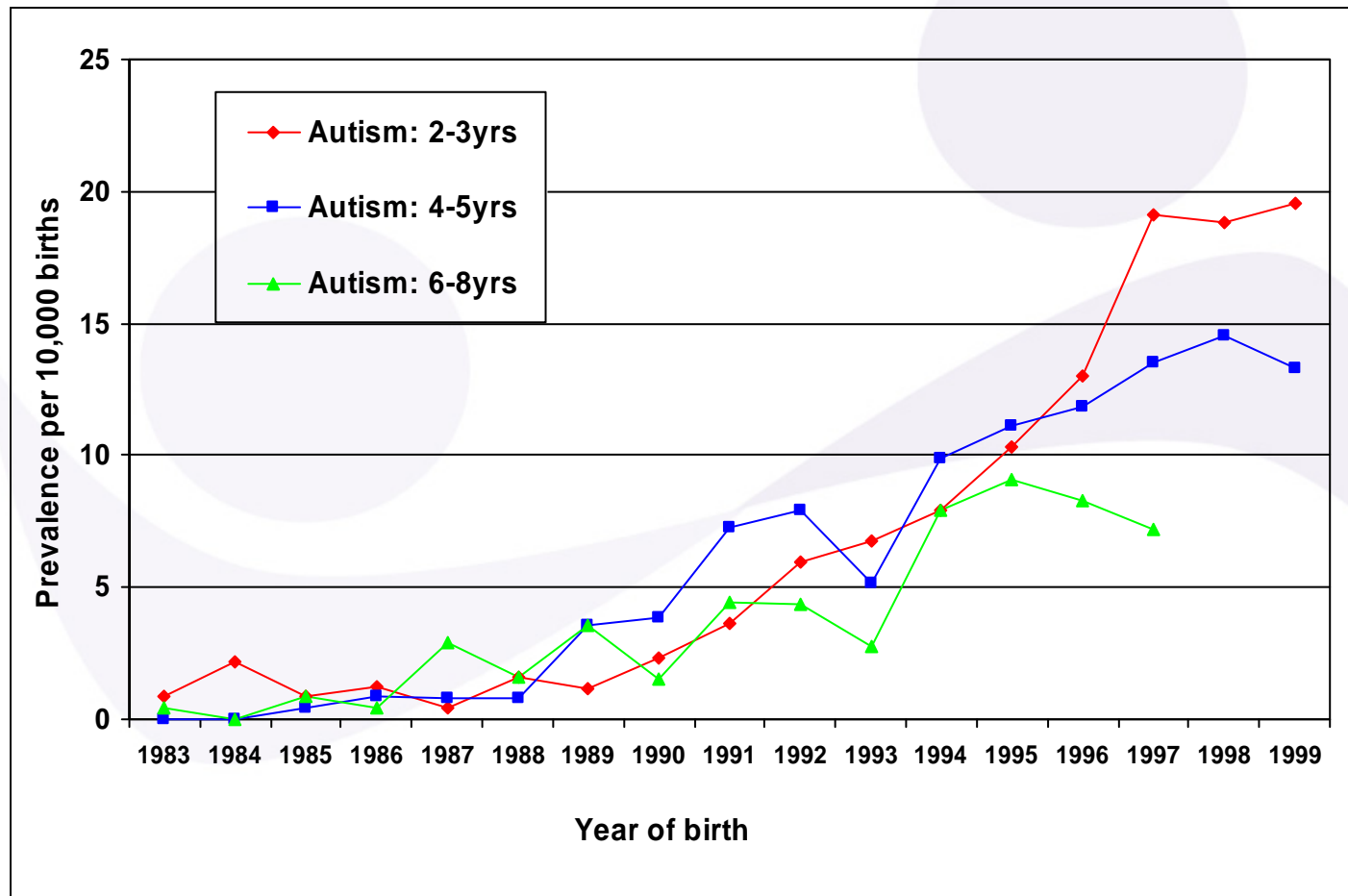
Happy 20th Birthday
Manitoba Centre for Health Policy
from
Telethon Institute for Child Health Research



Suicides: 15-19 year olds 1960 - 1998

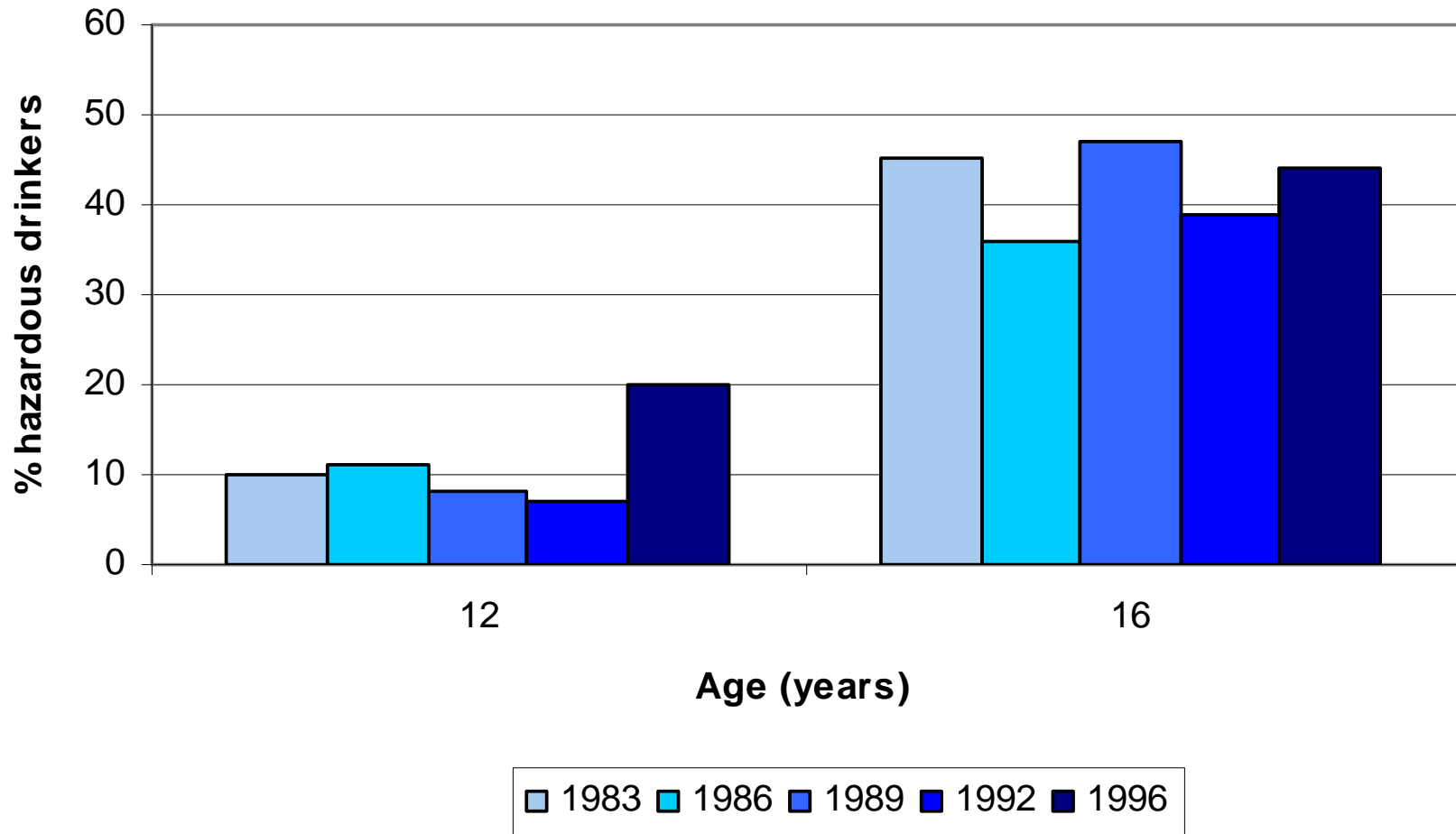


Trend in the prevalence of Autism and PDD-NOS in WA for children aged up to 8 years and born in 1983-1999



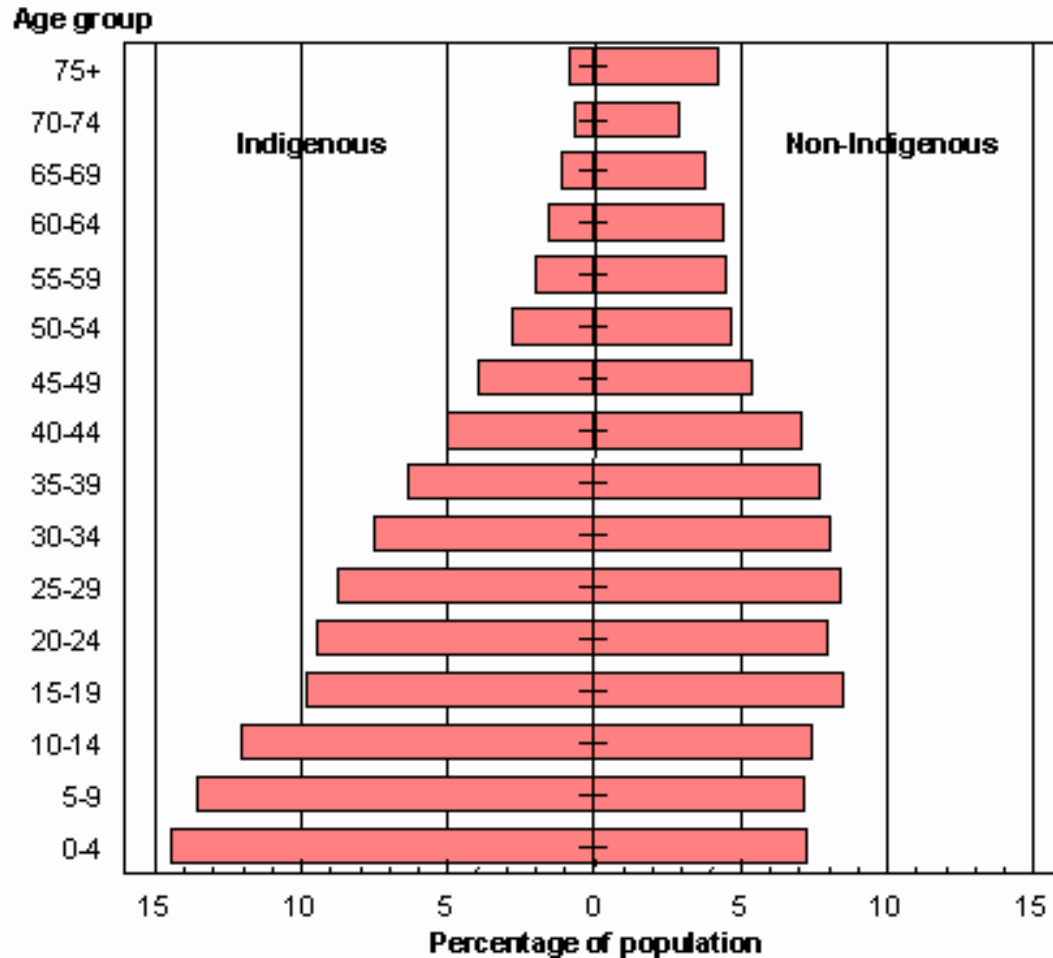
Alcohol Use - Boys

Boys



Australia: Growing old and growing young

Figure: Population pyramid of Indigenous and non-Indigenous populations, 2002



Australia/Canada and the Global Perspective

HUMAN DEVELOPMENT INDEX RANKING, 2003

HDI Rank	Country	HDI Score	HDI Rank	Country	HDI Score
1	Norway	.944	30	Republic of Korea	.879
2	Iceland	.942		<i>Canadian Aboriginal Population</i>	<i>.877</i>
3	Sweden	.941	32	Czech Republic	.861
4	Australia	.939	34	Argentina	.849
5	Netherlands	.938		<i>U.S. Aboriginal Population</i>	<i>.847</i>
6	Belgium	.937		<i>New Zealand Maori</i>	<i>.842</i>
7	United States	.937	42	Costa Rica	.831
8	Canada	.937	43	Chile	.831
9	Japan	.932	52	Cuba	.806
10	Switzerland	.932	53	Belarus	.804
13	United Kingdom	.930		<i>Canadian Registered Indian</i>	<i>.802</i>
16	Austria	.929	54	Trinidad and Tobago	.802
17	France	.925	55	Mexico	.800
19	Spain	.925	103	Cape Verde	.727
20	New Zealand	.917		<i>Australian Aboriginal Population</i>	<i>.723</i>
23	Portugal	.896	104	China	.721

CIVIL SOCIETY

Focus on:

Equality/diversity

Trust, care

Collective good

Valuing parents

Valuing childhoods

Prevention more than cures

Protected environments

Safe places for all

Effective use of helpful technologies

Child needs as well as adult's



UNCIVIL SOCIETY

Accepting of:

Inequalities

Fear, violence

Priority for material wealth

Parents not valued

Fast tracking childhoods

Cures more than prevention

Environmental degradation

Safe places for the few

Excessive use of damaging technologies

Adult needs more than children's

Child Protection Data

33 - Guildford/West Swan

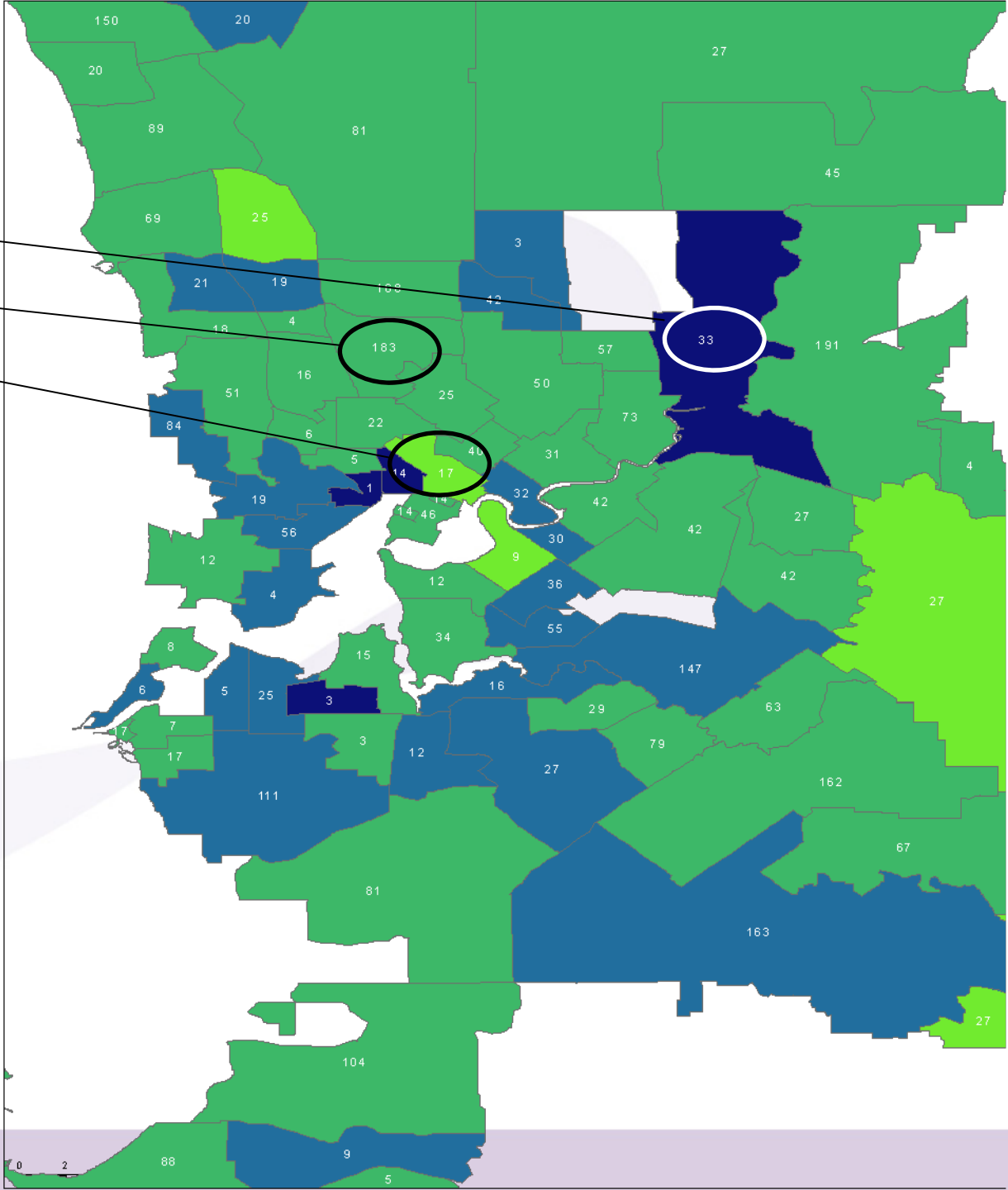
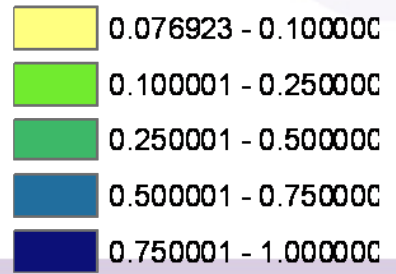
183 - Mirrabooka/Balga

17 - Menora, Mt Lawley

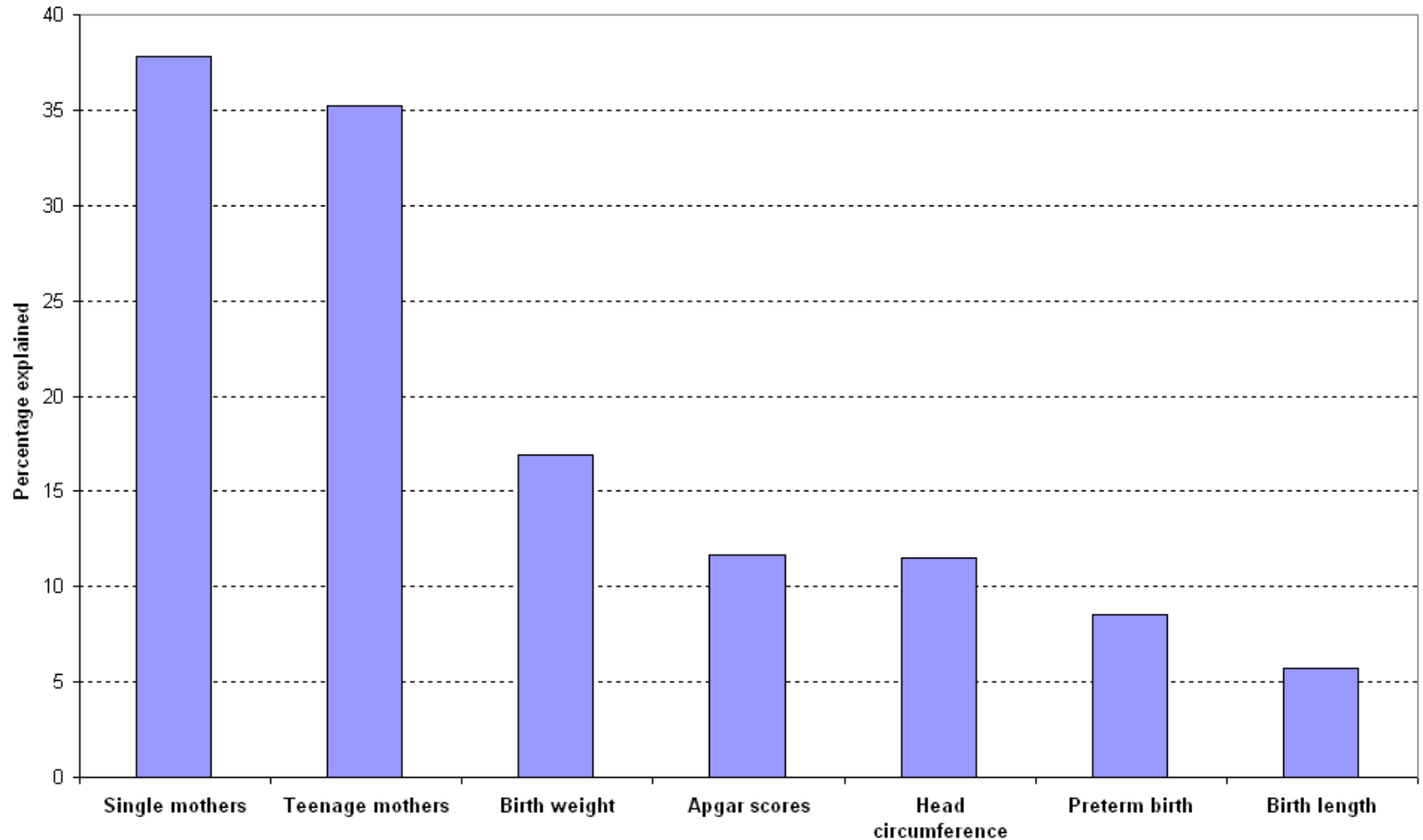
Legend

WA (postcode)

Substantiations



Percentage explained



WHO Recommendations:

Use of jurisdictional data outside child protection reporting:

- Hospital admissions
- Emergency Dept presentations
- Justice/Crime data

Gordon Enquiry Recommendation:

- Sexually transmitted infections