Applications of longitudinal research

Examples from Growing up in Australia: The Longitudinal Study of Australian Children and the Stronger Families in Australia study

Ben Edwards, Senior Research Fellow
Masters in Public Health, 18 July 2011, Melbourne
Some of this research has been funded by the Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA).

This paper uses unit record data from Growing Up in Australia: The Longitudinal Study of Australian Children (LSAC). The study is conducted in partnership between the Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA), the Australian Institute of Family Studies (AIFS) and the Australian Bureau of Statistics (ABS). The findings and views reported in this paper are those of the author and should not be attributed to FaHCSIA, AIFS or the ABS.
Presentation overview

- Overview of LSAC
- Benefits and possibilities of longitudinal data
- A natural experiment using LSAC, school starting age
- Evaluating Communities for Children with a longitudinal study
Benefits and possibilities of longitudinal research

Description
- Developmental trajectories over time (growth curve modelling, trajectory analysis)
- Time to an event (survival analysis)

Causal inference
- Natural experiments
- Fixed effects estimation or difference-in-difference
Growing Up in Australia: The Longitudinal Study of Australian Children

Ben Edwards
28 March, 2011, Melbourne
Study overview

- First nationally representative birth cohort study
- Measures all aspects of children’s development and environment
- 10,000 families recruited in 2004, now doing Wave 4
  - B cohort - aged 0-1 years; now aged 6-7 years
  - K cohort - aged 4-5 years; now aged 10-11 years
- Selected at random from Medicare (national health service) enrolment database
- Clustered by postcode (vary widely in both geographic and population size)
- Ongoing study – funded formally provided to Wave 8
Who’s doing it?

- Jointly managed and conducted by 3 government agencies:
  - Australian Government Department of Families, Housing, Community Services and Indigenous Affairs
    - Funders and overall management
  - Australian Institute of Family Studies
    - Design, content, output and analysis
  - Australian Bureau of Statistics
    - Development, data collection and processing since Wave 2
- Advice from a consortium of academics and researchers
Background
Why do it?

- To provide major evidence base for policy and intervention initiatives
  - Awareness of importance of the early years for later outcomes
  - “New morbidities”, e.g. asthma, obesity, anxiety, depression, etc.
  - Changes in family life: non-parental childcare, mothers return to work, relationship breakdown, increased use of technology
  - Understand contexts of development and developmental trajectories that can not be understood in ‘one off’ studies

- Was no other study on the development of children that was *nationally representative, large-scale, broadly focused, recent, Australian, and longitudinal*
Bronfenbrenner: ecological theory of child development

Plus

Set of “Key Research Questions” (recently revised)

The broad research questions cover:

- How well are Australian children doing on a number of key developmental outcomes?
- What are the child, family and community factors that are related to different child outcomes?
- What helps maintain an effective pathway, or change one that is not promising?
Study design

- Nationally representative of all Australian children in selected age ranges
- Cross sequential design

Age of cohorts, Waves 1–8

<table>
<thead>
<tr>
<th>Cohort</th>
<th>Wave 1</th>
<th>Wave 2</th>
<th>Wave 3</th>
<th>Wave 4</th>
<th>Wave 5</th>
<th>Wave 6</th>
<th>Wave 7</th>
<th>Wave 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant (B)</td>
<td>0–1 years</td>
<td>2–3 years</td>
<td>4–5 years</td>
<td>6–7 years</td>
<td>8–9 years</td>
<td>10–11 years</td>
<td>12–13 years</td>
<td>14–15 years</td>
</tr>
<tr>
<td>Child (K)</td>
<td>4–5 years</td>
<td>6–7 years</td>
<td>8–9 years</td>
<td>10–11 years</td>
<td>12–13 years</td>
<td>14–15 years</td>
<td>16–17 years</td>
<td>18–19 years</td>
</tr>
</tbody>
</table>
Study informants

- Parent 1
  - person in family who knows most about child, usually biological mother
- Parent 2
  - child’s other resident parent/guardian, or resident partner of Parent 1
- Parent living elsewhere
  - usually child’s other biological parent who no longer lives with Parent 1
- Study child
- Child’s teacher (previously child carer)
- Interviewer
- Linked data
  - Medicare; National literacy and numeracy assessment; National childcare accreditation; Census data; School test score averages and school characteristics
Overall response

MAIN WAVE
- 10,090 families in Wave 1
- 9,070 families in Wave 2 (90% of Wave 1)
- 8,718 families in Wave 3 (86% of Wave 1)
  - 268 who had missed W2

BETWEEN WAVE
- 7,157 (71%) responded to Wave 1.5
- 6,555 (65%) responded to Wave 2.5
- 5,990 (59%) responded to Wave 3.5
<table>
<thead>
<tr>
<th></th>
<th>Wave 1</th>
<th>Wave 2</th>
<th>Wave 3</th>
<th>Wave 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>TELEPHONE INTERVIEW</td>
<td></td>
<td></td>
<td></td>
<td>Computer assisted</td>
</tr>
<tr>
<td>PERSONAL INTERVIEW</td>
<td>Pen and paper</td>
<td>Computer assisted</td>
<td>Computer assisted</td>
<td>Computer assisted</td>
</tr>
<tr>
<td>SELF-COMPLETE IN HOME</td>
<td>2-3 page</td>
<td>4 page</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SELF-COMPLETE LEAVE BEHIND</td>
<td>12-page</td>
<td>12-page</td>
<td>12-page</td>
<td></td>
</tr>
<tr>
<td>LIGHT TIME USE DIARIES</td>
<td>2@24-hour</td>
<td>2@24-hour</td>
<td>2@24-hour</td>
<td></td>
</tr>
<tr>
<td>TOTAL TIME IN HOME</td>
<td>120 minutes</td>
<td>75 minutes</td>
<td>95 minutes</td>
<td>90 minutes</td>
</tr>
<tr>
<td></td>
<td>0-1 years</td>
<td>2-3 years</td>
<td>4-5 years</td>
<td>6-7 years</td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td>PHYSICAL MEASURES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head circumf., weight</td>
<td>y</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height, weight, girth</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
</tr>
<tr>
<td>Body fat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood pressure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COGNITIVE MEASURES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Who am I?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abridged PPVT</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
</tr>
<tr>
<td>WISC Matrix Reasoning</td>
<td></td>
<td></td>
<td>y</td>
<td>y</td>
</tr>
<tr>
<td>INTEVIEW</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIME DIARY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL TIME (approx)</td>
<td>5 mins</td>
<td>10 mins</td>
<td>30 mins</td>
<td>30 mins</td>
</tr>
</tbody>
</table>
Does it matter what age children start school in Australia?

Investigating the effects of school starting age on children’s outcomes

Ben Edwards, Australian Institute of Family Studies
Matthew Taylor, NATSEM, University of Canberra
Mario Fiorini, University of Technology, Sydney
School Starting Age

- At what age should I send my child to school?
- A difficult decision for parents.
- Previous international empirical research suggests that children who start school later do better than early entrants.
- We examine the causal impacts of school starting age (year before Year One) in Australia using the LSAC data.
School entry age and child development

- There is a positive correlation between school starting age and in-school tests.
- Two questions emerge:
  Q1. Is this evidence of a causal effect of age at school entry on school tests?
  Q2. If so, what is the mechanism through which age at school entry operates?
A natural experiment

- Children’s date of birth is random with respect to their outcomes
- Children’s place or state of birth is random
- States differ in the earliest time children can enter school
- If parents choose to send their child to school at the time State and Territories suggest then…
  - Entry Age = Predicted Entry Age
  - Correlation = Causal Effect.
A natural experiment

- Parents might not choose to send their children at the entrance age cut-off, delaying school entry.
- Entry Age ≠ Predicted Entry Age
- Entry age now also depends on parental and child’s characteristics, some of these may not be observed.
- Correlation ≠ Causal Effect
- We can use Predicted Entry Age to estimate a Causal Effect
Why does entry age matter?

**Mechanism 1** Age at Entry (EA)

**Mechanism 2** Age at Test (A@T)

**Mechanism 3** Relative Age (RA)

Our measure of EA does not separate these three different mechanisms.

We do however test for a causal relationship.
Summary of the International Literature

Most studies (US, UK & Norway) between 2006 and 2009.

Q1: Does age matter?
- Evidence of a positive causal effect of starting school later.
- Causal Effect < Correlation.

Q2: Which age matters?
- **Entry Age:** Some evidence but the effect is not strong.
- **Age at Test:** The dominant effect.
- **Relative Age:** Difficult to obtain precise causal estimates. Still an open question but the effects are likely to be small.
Summary of the Australian Literature

Some related economic research:

Ryan (2004)
- Additional Year of Primary School increases Numeracy and Literacy Scores in South Australia.

Ryan (2006)
- Additional years of school at the beginning of school increases Literacy Scores for girls (controlling for Age and Grade).

Small number of studies directly addresses our question:

Peck & Trimmer (1995)
- No evidence that younger children with a normal grade progression obtain lower TES scores.
- Younger children are however less likely to have a normal grade progression but are not necessarily disadvantaged by this in terms of TES.

Martin (2009)
- Models the effect of “Age-Within-Cohort” confounding EA, A@T & RA.
- Findings suggest younger students have higher (combined) Numeracy and Literacy Scores.
- However, “Age-Within-Cohort” and Grade Retention are likely to be simultaneously determined.
Chronology of School Entry in LSAC

Victoria

Western Australia

Australian Government
Australian Institute of Family Studies
Chronology of School Entry in LSAC

**Victoria**

- Cut-off: April 30
- **W1**
- **W2**

**Western Australia**

- Cut-off: June 30
- **W1**
- **W2**

**Australian Government**

Australian Institute of Family Studies
Chronology of School Entry in LSAC

Victoria

Cut-off: April 30

1999 2000 2001 2002 2003 2004 2005 2006

Births

Kyle: Born 3/99
Eric: Born 5/99

Western Australia

Cut-off: June 30

1999 2000 2001 2002 2003 2004 2005 2006

Births

W1 W2

Australian Government
Australian Institute of Family Studies
Chronology of School Entry in LSAC

**Victoria**
- Cut-off: April 30
- Kyle: Born 3/99
- Eric: Born 5/99
- Kyle: Enters school 2/04
- Age: 4 years 11 months
  
**Western Australia**
- Cut-off: June 30
- W1: Born 6/00
- W2: Born 6/01
Chronology of School Entry in LSAC

Victoria

Cut-off: April 30

1999

Births

2000

Kyle: Born 3/99
Eric: Born 5/99

2001

2002

2003

2004

Kyle: Enters school 2/04
Age: 4 years 11 months

2005

2006

Eric: Enters school 2/05
Age: 5 years 9 months

Western Australia

Cut-off: June 30

1999

Births

2000

2001

2002

2003

2004

W1

2005

W2

2006
Chronology of School Entry in LSAC

**Victoria**

- Cut-off: April 30
- Kyle: Born 3/99
- Eric: Born 5/99
- Kyle: Enters school 2/04
  - Age: 4 years 11 months
- Eric: Enters school 2/05
  - Age: 5 years 9 months

**Western Australia**

- Cut-off: June 30
- Kyle: Born 3/99
- Eric: Born 5/99
- Kenny: Born 7/99
Chronology of School Entry in LSAC

**Victoria**

- Births: April 30
- Kyle: Born 3/99
- Eric: Born 5/99
- Kyle: Enters school 2/04
  - Age: 4 years 11 months
- Eric: Enters school 2/05
  - Age: 5 years 9 months

**Western Australia**

- Births: June 30
- Kyle: Born 3/99
- Eric: Born 5/99
- Kenny: Born 7/99
- Kyle & Eric: Enter school 2/04
  - Kyle Age: 4 years 11 months
  - Eric Age: 4 years 9 months
- Eric Age: 4 years 9 months

*Australian Government*  
*Australian Institute of Family Studies*
Chronology of School Entry in LSAC

**Victoria**
- **Cut-off**: April 30
- Kyle: Born 3/99
- Eric: Born 5/99
- Kyle enters school 2/04, Age: 4 years 11 months
- Eric enters school 2/05, Age: 5 years 9 months

**Western Australia**
- **Cut-off**: June 30
- Kyle: Born 3/99
- Eric: Born 5/99
- Kenny: Born 7/99
- Kyle & Eric enter school 2/04, Kyle Age: 4 years 11 months, Eric Age: 4 years 9 months
- Kenny enters school 2/05, Age: 5 years 7 months
<table>
<thead>
<tr>
<th>State</th>
<th>Program Name</th>
<th>Age of entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td>Kindergarten</td>
<td>5 by 31 July</td>
</tr>
<tr>
<td>Vic</td>
<td>Prep</td>
<td>5 by 30 April</td>
</tr>
<tr>
<td>Qld</td>
<td>Prep</td>
<td>5 by 1 Jan</td>
</tr>
<tr>
<td>WA</td>
<td>Pre-primary</td>
<td>5 by 30 June</td>
</tr>
<tr>
<td>SA</td>
<td>Reception</td>
<td>multiple intakes</td>
</tr>
<tr>
<td>Tas</td>
<td>Prep</td>
<td>5 by 1 Jan</td>
</tr>
<tr>
<td>ACT</td>
<td>Kindergarten</td>
<td>5 by 30 April</td>
</tr>
<tr>
<td>NT</td>
<td>Transition</td>
<td>multiple intakes</td>
</tr>
</tbody>
</table>
Estimation sample

**Included:** Victoria, Western Australia, Tasmania and the ACT

**Excluded:**
- South Australia: Continuous entry.
- Northern Territory: Continuous entry.
- Queensland: No pre-Year 1 year of schooling in 2004/05.
- New South Wales: Systemic delayed enrollment. This is understandable in the NSW context.
Statistical Methodology

Correlational: Ordinary Least Squares (OLS) regression
Causal: Instrumental Variables (IV) regression

Covariates:
- Child gender
- Child is Aboriginal or Torres Strait Islander
- Mother and father’s education (if present)
- Two parents in the home
- Number of siblings
- Number of people in the household
- Mother and father’s income (if present)
- Mother and father’s English proficiency (if present)
- Ex-metropolitan area
The LSAC outcomes

Cognitive:
- Peabody Picture Vocabulary Test
- Matrix Reasoning from the WISC IV

Social and emotional, Strengths and Difficulties Questionnaire (teacher):
- Hyperactivity
- Conduct Problems
- Emotional Symptoms
- Peer Problems
- Prosocial Behaviour

All outcomes standardised to have a mean of zero and a standard deviation of one.
Does school entry age matter?
The National Evaluation of Communities for Children

Ben Edwards, Senior Research Fellow, Australian Institute of Family Studies
National evaluation consortium

Australian Institute of Family Studies
Professor Matthew Gray (formerly AIFS, now at the ANU)
Dr Sarah Wise (formerly AIFS, now at Anglicare)
Professor Alan Hayes (Director of the Institute)

Social Policy Research Centre, UNSW
Associate Professor Kristy Muir (UNSW)
Professor Ilan Katz (Director, SPRC, UNSW)
Dr Roger Patulny (Research Fellow, SPRC)
The Communities for Children model

Facilitating Partners

CfC Committee

Develop plans & manage funds

Community Partners deliver services

Logic = provide new services + increased service coordination and cooperation = improved outcomes
Challenges for evaluation

- Key action areas in the National Agenda for Early Childhood are broad
- Community is the target of intervention
- CfC is implemented in 45 disadvantaged areas nationally
- Content, target groups and specific objectives differs in each CfC site
- Short run effects (approximately 12-months after program started)
Hypothetical example of the impact of CfC
How to estimate the impact of CfC?

- 10 CfC and 5 Contrast sites
- Longitudinal study of 2,200 families with a 2-year child
- 3-waves of data collected
  - 1st wave pre-intervention (baseline) -2 years old
  - 2nd wave around time of implementation of intervention -3 years old
  - 3rd wave post-implementation -4 years
- Random sample of from families receiving FTB Part A or B
- 42% of the target population participated at wave 1
Outcomes: Health

- Number of child injuries requiring medical attention in the past year.
- Child physical functioning, 8-item Pediatric Quality of Life Inventory (PedsQL) (Varni et al. 2003)
- Child emotional and behavioural problems, as assessed by Strengths and Difficulties Questionnaire (SDQ) (Goodman 1997)
- Child prosocial behaviour, Prosocial subscale of the SDQ
- Child overweight, derived from BMI, measured at Wave 3 only.
- A global rating of parent physical health
- Parent mental health, using the 6-item Kessler-6 scale (K-6) (Kessler et al. 2003).
Outcomes: Families & Early learning and care

- Parent self-ratings of hostile/irritable parenting
- Parenting self-efficacy
- Parental relationship conflict
- Children’s receptive vocabulary achievement and verbal ability (PPVT) at Wave 3.
- Home learning environment
Outcomes: Child-friendly communities

- Support in raising children
- Parent involvement in community service activities
- Parent assessment of the neighbourhood as a place to bring up children
- Community social cohesion
- Community facilities
- Unmet service need
Evaluation methodology

Impact of CfC estimated using two methods:
1. Difference-in-difference
2. OLS or logistic regression

Key assumption contrast sites are a valid counterfactual, that is, in the absence of CfC the children and families in CfC sites would, on average, have done the same as those in the contrast sites.
Wave 3 cross-sectional model

\[ Y_i = \alpha + \beta_0 \text{CfC} + \beta_1 Z_i + e_i \]

Where:

\( Y_i \) = outcome for individual \( i \) post the CfC intervention

\( \alpha \) = constant term

\( \text{CfC} \) = 1 if individual \( i \) lived in a CfC site pre-intervention and 0 if individual \( i \) lived in a contrast site pre-intervention

\( Z_i \) = a vector of individual family/child characteristics

\( e_i \) = random error term.
Difference-in-difference model

The Wave 1 to Wave 3 difference-in-difference (DD) estimate of the effects of the CfC intervention were given by:

$$DD = \frac{(Y_{Wave3}^{CfC} - Y_{Wave1}^{CfC}) - (Y_{Wave3}^{Contrast} - Y_{Wave1}^{Contrast})}{(Y_{Wave3}^{Contrast} - Y_{Wave1}^{Contrast})}$$  \hspace{1cm} (2)

Where:

$$\frac{(Y_{Wave3}^{Contrast} - Y_{Wave1}^{Contrast})}{(Y_{Wave3}^{CfC} - Y_{Wave1}^{CfC})}$$ = the average rate of change from Wave 1 to Wave 3 in contrast sites  

$$\frac{(Y_{Wave3}^{CfC} - Y_{Wave1}^{CfC})}{(Y_{Wave3}^{Contrast} - Y_{Wave1}^{Contrast})}$$ = the average rate of change from Wave 1 to Wave 3 in CfC sites.

The difference-in-difference estimates included the same set of control variables as the Wave 3 cross-sectional analysis. The model estimated was:

$$Y_{it} = \alpha + \beta_2 Z_{it} + \beta_2 T_2 + \beta_3 T_3 + \beta_4 CsCfC + \beta_5 T_2 CfC + \beta_6 T_3 CfC + e_{it}$$  \hspace{1cm} (3)

Where:

$$Y_{it}$$ = the outcome for individual $$i$$ at time $$t$$  

$$\alpha$$ = constant term  

$$Z_{it}$$ = a vector of individual family/child characteristics that are time varying  

$$T_2$$ = indicator for Wave 2  

$$T_3$$ = indicator for Wave 3  

$$CsCfC$$ = indicator for living in a CfC site at Wave 1  

$$e_{it}$$ = random error term that is normally distributed.
The covariates were:

- the gender and age of the child
- whether the child was of Aboriginal or Torres Strait Islander origin
- maternal age
- maternal education
- maternal labour force status
- household income
- at least one of the parents was born overseas.
- whether the father was ‘present and working’, ‘present and not working’ or ‘absent’

Given that CfC and contrast sites were matched on the Socio-Economic Index for Areas (SEIFA), which comprises over 30 area-level variables, it was not necessary to include area characteristics as control variables.
CfC impacts on disadvantaged groups

Disadvantaged children are:
- at risk of poorer outcomes, and
- less likely to benefit from area-based interventions

Three groups were studied:
- **Hard-to-reach households** (no father present, mother not employed and father not working/not present, low household income, maternal education Year 10 or less, a parent born overseas, and child is of Aboriginal or Torres Strait Islander origin)
- Households with low income ($485 a week or less)
- Households with mothers with low education (Year 10 or less)
### Significant effects of CfC, families in CfC sites compared to contrast sites

<table>
<thead>
<tr>
<th>Outcome variable</th>
<th>Full sample</th>
<th>Hard-to-reach status</th>
<th>Mother’s education</th>
<th>Income</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Hard-to-reach</td>
<td>Not hard-to-reach</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Year 10 or less</td>
<td>Higher than Year 10</td>
</tr>
<tr>
<td>Less hostile parenting</td>
<td>✔ (W3**)</td>
<td>✔ (W3*)</td>
<td>✔ (W3**)</td>
<td>✔ (W3*)</td>
</tr>
<tr>
<td>Parenting self-efficacy</td>
<td>✔ (W3*)</td>
<td>✔ (W3*)</td>
<td>✔ (W3**)</td>
<td>✔ (W3*)</td>
</tr>
<tr>
<td>Service needs are met</td>
<td>× (W3**)</td>
<td>× (W3**)</td>
<td>✔ (W3*)</td>
<td>✔ (W3*)</td>
</tr>
<tr>
<td>Living in a household with a job</td>
<td>✔ (DD** &amp; W3**)</td>
<td>✔ (DD** &amp; W3**)</td>
<td>✔ (DD**)</td>
<td>✔ (DD**)</td>
</tr>
<tr>
<td>Involvement in community service activities</td>
<td></td>
<td></td>
<td>✔ (W3**)</td>
<td>✔ (W3**)</td>
</tr>
<tr>
<td>Community social cohesion</td>
<td></td>
<td></td>
<td></td>
<td>✔ (DD*)</td>
</tr>
<tr>
<td>Child receptive vocabulary and verbal ability&lt;sup&gt;(a)&lt;/sup&gt;</td>
<td>✔ (W3*)</td>
<td>✔ (W3**)</td>
<td>✔ (W3**)</td>
<td>✔ (W3**)</td>
</tr>
<tr>
<td>Child has no/few emotional and behavioural problems</td>
<td>✔ (W3**)</td>
<td>✔ (W3**)</td>
<td>✔ (W3**)</td>
<td>✔ (W3**)</td>
</tr>
<tr>
<td>Reported child physical health</td>
<td>× (W3**)</td>
<td>× (W3** &amp; DD*)</td>
<td>× (W3**)</td>
<td>× (W3**)</td>
</tr>
<tr>
<td>Parent-reported general health</td>
<td>× (DD*)</td>
<td>× (W3**)</td>
<td>× (W3**)</td>
<td>× (W3**)</td>
</tr>
<tr>
<td>Parent-reported mental health</td>
<td></td>
<td>× (DD**)</td>
<td>× (DD**)</td>
<td></td>
</tr>
</tbody>
</table>

✔ = CfC result is ‘better’ than the control site

✗ = CfC result is ‘worse’ than the control site

---

Australian Government
Australian Institute of Family Studies
Summary of CfC Impacts

Short run effects but similar in size to other early childhood interventions

Positive effects:
- for disadvantaged families on community engagement and involvement
- rates of jobless households
- parenting
- verbal ability among children with mothers with relatively low education and those that were not HTR
- fewer children were experiencing emotional or behavioural problems in the non-HTR group

There was a small negative effect on child physical health overall and a small negative effect on parent health for disadvantaged groups
Early impacts of Communities for Children on children and families: findings from a quasi-experimental cohort study

Ben Edwards,¹ Matthew Gray,¹ Sarah Wise,² Alan Hayes,¹ Ilan Katz,³ Kristy Muir,⁴ Roger Patulny²

ABSTRACT

Background There have been few evaluations of national area-based interventions. This study evaluated the early impacts of Communities for Children (CIC) on children and their families and whether the effectiveness differed for more disadvantaged families.

Methods A quasi-experimental cohort study in socioeconomically disadvantaged communities in Australia. Mothers of children aged 2–3 years participated at wave 1; 1486 children in CIC communities and 714 children in comparison communities. Outcome measures included child health and development, family functioning and parenting, and services and community.

Results After controlling for background factors, there were beneficial effects associated with CIC. At wave 3, in CIC areas children had higher receptive vocabulary (mean difference (MD) 0.25, 95% CI −0.02 to 0.51; p=0.07), parents showed less harsh parenting (MD −0.14, 95% CI −0.30 to 0.02; p=0.08) and higher parenting self-efficacy (MD 0.11, 95% CI 0.00 to 0.21; p=0.04). Fewer children living in CIC sites were living in a jobless household (OR 0.56, 95% CI 0.32 to 0.95; p=0.03) but children’s physical functioning (MD −0.26, 95% CI −0.53 to 0.00; p=0.05) was worse in CIC sites. For children living in households with mothers with low education there were reduced child injuries requiring medical treatment (MD −0.61, 95% CI −0.07 to −1.13; p=0.03) and increased receptive vocabulary (MD 0.57, 95% CI 0.06 to 1.08; p=0.03).

Conclusions CIC showed some benefits for child receptive vocabulary, parenting and reducing jobless households and two adverse effects. Children living in the most disadvantaged households also benefited.

to allocate funding for these services to local providers. The local service providers then delivered these services.

CIC did not include any prescribed services. The type of the services delivered in each community was decided by the local committees based on a needs assessment.¹ The services included home visiting, programmes on early learning and literacy, parenting and family support, child nutrition and community events. The facilitating partners were also funded to increase service coordination and cooperation between service providers. The explicit focus on service coordination and cooperation in communities was a novel aspect of the initiative.

While a number of countries have implemented area-based interventions designed to improve outcomes for children in disadvantaged areas, few have been rigorously evaluated.¹ An exception in the UK is Sure Start Local Programmes (SSLP), which was an area-based intervention that targeted all children aged under 4 years and their families. Each SSLP had extensive local autonomy in terms of the services that were developed,³ a feature CIC shares with Sure Start. The evaluation of the early effects (short-run) of SSLP found mixed effects, with beneficial effects for some groups, but adverse effects for children from families with higher needs and experiencing greater disadvantage.³ Results from the second phase of the evaluation were more positive. Children in Sure Start local areas were more likely to be immunised, less likely to have accidents requiring treatment, and had significantly higher scores on measures of positive social behaviour and independence/self-regulation.⁴ The present study aims to evaluate the impact of CIC on children and their families by investigating

¹ Australian Institute of Family Studies, Melbourne, Victoria, Australia
² Policy Research and Innovation Unit, Victoria, Australia
³ Social Policy Research Centre, The University of New South Wales, Sydney, New South Wales, Australia
⁴ Disability Studies and Research Centre, The University of New South Wales, Sydney, New South Wales, Australia

Correspondence to
Dr Ben Edwards, Australian Institute of Family Studies, Level 20, 486 La Trobe Street, Melbourne, Victoria 3000, Australia; ben.edwards@aisf.gov.au
Accepted 27 December 2010
LSAC & LSIC
Research Conference 2011
15–16 November 2011
Rydges on Swanston, Melbourne
LSAC Data Workshop – 14 November 2011, ABS, Melbourne Victoria
LSIC Data Workshop – 17 November 2011, ABS, Melbourne, Victoria
Registrations now open!