Australian Early Development Index: potential uses of the data

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An **Evidence Check** review brokered by the Sax Institute
for the NSW Department of Health

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This rapid review was brokered by the Sax Institute.

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EXECUTIVE SUMMARY

The Early Development Instrument (EDI), a measure of early child development in relation to school readiness, is being used across several countries for a range of purposes. Population level implementation has occurred in Canada, Australia, and regions of Chile, Mexico and the United States of America. Three provinces of Canada, which are equivalent to states of Australia, have now collected three waves of data from 2000. Information from the EDI has been used to inform program evaluation, health policy and health programs, social and community services and policy and programs in indigenous communities. Underpinning the implementation of the EDI in Canada has been federal government recognition of the importance of early child development. Key to the use of the EDI, including its contributing to policy and program development, has been the establishment of:

- Research organisations that collect and deliver the EDI results in appropriate formats to inform policy and program decisions in relation to early child development at all levels, including provincial government departments, regional health authorities, school district boards and community groups
- Province-wide intersectoral community coalitions that bring together all the sectors of the community, as well as representatives from provincial government and regional health authorities, to look at EDI data, analyse local needs and plan collaboratively for reallocation of resources, as well as advocate for new resources and programs. These coalitions are funded by provincial government initiatives
- Better coordination of existing regional/local services and activities through enhanced communication with the research organisations and province-wide intersectoral community coalitions (as described above), facilitating needs assessments and service/program planning.

The major research activities to date have included:

1) Use of the EDI as an outcome when considering which other known socioeconomic, family and health factors are important in getting children ready for school
2) Data linkage to build a picture of development throughout childhood and to assess the predictive validity of the EDI
3) Use of the EDI as an outcome measure to determine whether certain programs that have been implemented in specific areas are making a difference.

The Australian Early Development Index (AEDI), an Australian adaptation of the EDI, has now been nationally implemented and the AEDI National Support Centre has been established. The AEDI has been adopted as a performance indicator for the National Framework for Protecting Australia's Children 2009-2012. At a community level, profiles are now available and community partnerships are forming in some regions that bring together relevant government departments with community groups and business, to

support community projects. Most current activity is based in Victoria and Western Australia. To maximise the potential the AEDI has to improve child health and wellbeing it now needs to be incorporated into decision making for each state government. The first step is to develop systems, such as health service research centres, intersectoral planning groups and local community networks. The second step is to use these systems to incorporate AEDI information into policy and program planning. The final step is to incorporate the AEDI into continual evaluation and monitoring of policy and service changes.

Background and information

The Early Development Index (EDI) is a survey completed by teachers about children attending kindergarten to gather data on five subscales of development 1) physical health and wellbeing; 2) social competence; 3) emotional maturity; 4) language and cognitive development; and 5) communication skills and general knowledge. It was developed by Drs Dan Offord and Magdalena Janus at the Offord Centre for Child Studies at McMaster University in 1998 as a tool that could report on populations of children in different communities; assess the strengths and needs of students; and predict how children will do in elementary school (Janus and Offord, 2007).

The EDI is intended to measure children's readiness for school at a group level – it is not an individual assessment tool. School readiness is influenced by children's early years and the family and community factors that shape children's early years. Thus, while the EDI provides a valuable tool for measuring early child development, its findings are most effective when linked to other measures such as social and economic status of the community; the availability of children's programs, community centres, playgrounds and libraries; and health, crime or employment statistics. By tracking EDI profiles over time, governments, schools and agencies can evaluate the impact of their programs on children's wellbeing. Thus, a change in the environment that directly impacts in a negative way on children and their families can be measured in falling EDI scores – an indication of children's vulnerability (McCain et al. 2007). In Canada, the EDI is implemented on a three year cycle and to date three waves of data have been made available, the last being 2008/9 data. As evident in this review, this data is being utilised at all levels of society from community through to provincial government. Coalitions involving representatives from community, regional health authorities, provincial government departments, research organisations and school districts have worked together to establish frameworks at all levels to guide service planning and policy and program decisions.

In 2009 the Australian Early Development Index (AEDI), a modified version of the EDI, was implemented nationwide following its acceptance in 2006 as a national tool for measuring early childhood development by the Council of Australian Governments (Council of Australian Governments National Reform Initiative Working Group). Information was collected on 261,203 Australian children (97.5 per cent of the estimated five year old population) in their first year of full time school between 1 May and 31 July that year (Centre for Community Child Health et al. 2009). Apart from this report, the results are also reported at the community level to aid development and evaluation of community-based efforts to improve outcomes for children (http://maps.aedi.org.au). A National Support Centre has been established to ensure there is appropriate governance and scrutiny in regard to implementation of the AEDI, including the development of a novel web-based data entry system, and a system to address and engage the different state and territory government structures and educational systems, including a strategic stakeholder advisory group and personal liaison. From this

nationwide implementation, evidence-based information is being developed upon *which future policy and program decisions can be made (Goldfeld et al. 2009).*

Aims

This report has been developed to address the following questions:

- Has Canada's EDI, or any other similar population-based early childhood index, been used to inform policy and program decisions in health?
- Has Canada's EDI, or any other similar population-based early childhood index, been used to inform policy and program decisions in the social and community services sectors that are relevant to child development in the first five years of life?
- Have EDI data been used specifically to inform policy or program decisions affecting indigenous communities?
- Have EDI data been linked with other population-based databases to inform policy or program decisions in health? If so, what were the findings?
- Is there any evidence that suggests an optimal way to use the EDI as a predictive measure of health or health-related outcomes?

Methods

Academic databases (Medline, PsycInfo, Cochrane and Global Health surveys) were searched for peer reviewed articles using the search terms and strategy as shown in Appendix 1.

Searches were limited to years 1990-2010. A search executed across all databases using the single search term, "early development instrument".tw, resulted in 38 references in total, of which four references were selected as appropriate to this review (See Appendix 4, Results). Searches using a combination of the search terms to identify early childhood indexes that may have informed policy and programs relevant to health, social and community sectors and indigenous populations (Appendix 1), resulted in a further 70 references being identified, however, none were considered relevant to this review. A comprehensive review of the grey literature was also conducted and included the websites listed in Appendix 2. Further websites that provide direct links to relevant government sites, reports and conference presentations, are provided in the Results section, Appendices 5-10, or in the References. The Healthy Child Manitoba Office (HCMO), Canada was also contacted via email to request whether the new HCMO Report had been released (due out end of March), however no response has been received to date.

Results

Appendix 3 identifies the countries that are currently using the EDI, or an adaptation, and for what purpose. To date, Canada has used the EDI to inform program evaluation, health policy, health programs, social and community services and policy and programs in indigenous communities, as well as linked the EDI results with other databases and used it as a predictive measure of health and health related outcomes at a population level. In Australia, the AEDI is to be used as an indicator of child development for a National Framework for Protecting Australia's Children (see Appendix 5) and its influence on social and community services is just emerging.

Appendix 4 presents detailed information about the four studies found by searching academic electronic databases. These studies are also referred to, where relevant, in relation to the questions below.

Questions 1 & 2: Has Canada's EDI, or any other similar population-based early childhood index, been used to inform policy and program decisions in health and/or in the social and community services sectors that are relevant to child development in the first five years of life?

One study published in the academic literature from Canada has provided information about the Toronto First Duty Project, an integrated services demonstration project that combined kindergarten, child care, and parenting supports in public schools (Corter et al. 2008, Appendix 4). This study used the EDI to evaluate the program and reported that the demonstration program was associated with modest improvements in emotional and social domains of children's development.

The remainder of information relevant to Questions 1 and 2 is available from grey literature and is provided in Appendices 5-7. The application of EDI data is at the school, community or province/state level. It is not meant for application at the individual level but has been used in this way (Janus and Duku, 2007, Appendix 4). Figure 1 illustrates how the EDI has been implemented and used across Canada. Starting from development of a communiqué on early child development at the federal level, early childhood development frameworks/strategies have been developed to support policy/program development and practice at all levels including provincial, regional health authority (RHA) and community levels. EDI maps and tables are developed from the data by a research organisation in partnership with the government, and provided to communities and RHAs to determine areas of child development that need to be prioritised. As evident in Appendix 5, a number of initiatives have developed as a result of this process at the provincial level, which in turn have provided funding and direction towards early child development (ECD) initiatives at the community level. For example, the Children First Initiative in British Columbia provides funding towards Parent-Child Coalitions, which include representation from parents, school divisions, early childhood educators, health professionals and other community organisations (Appendix 6). These Coalitions work in partnership with the research organisation administering the EDI data and the RHA to

look at the EDI data, analyse local needs and plan collaboratively for reallocation of resources, as well as advocate for new resources and programs (Appendix 6). Core priorities of Coalition activities include positive parenting, nutrition and physical health, literacy and learning, and community capacity. A similar approach has been adopted in Ontario with the establishment of intersectoral community coalitions. Apart from increasing public ownership, coalitions influence the translation of community results into provincial and federal public policy.

The fact that the EDI has been implemented over three time points in many parts of Canada (wave 1: 2000-2004, wave 2: 2005-2007, wave 3: 2008-2009) now makes it possible to compare results longitudinally as well as cross-sectionally across communities. Therefore, the EDI could be used as an outcome measure to determine whether certain programs that have been implemented in specific areas are making a difference. To date, only one study has been published that has shown improvement in the EDI following introduction of a program when compared to baseline data and to other similar regions where the new program was not implemented (Corter et al. 2008).

Question 3: Have EDI data been used specifically to inform policy or program decisions affecting indigenous communities?

Appendix 8 provides information about specific policy and program decisions affecting indigenous communities in Canada. In Canada, the EDI has been shown to be adaptable to all socioeconomic and cultural backgrounds (Guhn et al. 2007). As a result, the EDI has been completed in regions with large indigenous populations and in Francophone communities where English is a second language (Kershaw et al. 2005). This has not been possible with previous childhood indicators in Canada such as the National Longitudinal study of Children and Youth (NLSCY) that was initiated in 2004 and completed every two years, the last survey being in 2006/07 (Health Child Committee of Cabinet, 2008). Possibly because of the EDI's adaptability, there are few policies/programs specifically targeting indigenous children that have been informed by the EDI. Rather, initiatives such as Children First in British Columbia (BC), support programs in indigenous communities that are run by indigenous groups. For example, in Prince George, BC, a partnership between local community groups including Make Children First (a Children First Initiative) have created the "Queensway Community Garden", a nutrition project to enhance local emergency food services and to grow produce for agency hamper baskets and community kitchens (Kershaw et al. 2005). This was organised in response to EDI results showing aboriginal children versus all children in the area were experiencing physical vulnerability levels above those predicted based on the neighbourhood's socioeconomic status (Figure 2).

In Australia, the AEDI is being modified to specifically measure development in Indigenous children and children speaking a language other than English (LOTE) (http://www.rch.org.au/aedi/about.cfm?doc_id=13315). As in Canada, the AEDI will be an improvement on the Longitudinal Study of Australian Children (LSAC), which does not cover all Indigenous and culturally diverse backgrounds (Sanson et al. 2002). An example where the Indigenous AEDI is being used to target areas of identified need in early

childhood development is in the Pilbara region. This project was developed in response to a feasibility study that identified health as a critical social issue for the future success of the region. It resulted in the establishment of a Health Partnership between Pilbara communities, local governments, service providers and BHP Billiton Iron Ore, who were keen to sponsor the project as part of their three year commitment to health in the region (http://www.ichr.uwa.edu.au/files/user19/AEDI%20Fact%20Sheet.pdf). The results for the Port Hedland region of the Pilbara showed that overall there are 26.6%of children developmentally vulnerable on one or more domains of the AEDI and 13.6% are developmentally vulnerable on two or more domains (http://maps.aedi.org.au/lga/wa/57280). Interventions are being established however, their outcomes are not yet available.

Question 4: Have EDI data been linked with other population-based databases to inform policy or program decisions in health? If so, what were the findings?

The EDI can assess levels of vulnerability in children for each of the developmental domains separately or as a composite across one or more domains (Kershaw et al. 2005). However, the EDI is most valuable when linked with other key indicators such as socioeconomic status to investigate vulnerability in different areas of child development in neighbourhoods (Kershaw et al. 2005). As shown in Appendix 9, current research is underway to establish developmental trajectories for children starting from prenatal development through to teenage years. A range of indicators have already been linked with EDI including low birth weight (part of the Families First Screening policy in Manitoba) and educational outcome measures for investigating academic trajectories. There is potential for linkage to many other indicators (Figure 3 & 4).

Question 5: Is there any evidence that suggests an optimal way to use the EDI as a predictive measure of health or health-related outcomes?

In terms of predictive validity, research is limited in relation to health and health-related outcomes and is more focused at this stage on how academic performance early in life may predict the level of university graduations, employment and criminal behaviours later in life (Appendix 10). Also published in the academic literature are two studies describing the relationship between the EDI and other community factors (Lapointe et al. 2007; Carpiano et al. 2009) (see Appendix 4).

Summary and identification of key issues

This review shows that the EDI has successfully moved beyond research use to more mainstream recognition in a relatively short time. The EDI is now viewed as an effective tool to assist decision makers at various levels with resource planning for children. It has the potential for even wider implementation and provides the opportunity to think about the social and environmental factors that influence child development throughout childhood. With all groups of children being distinctly identified on the EDI, including

children with special needs, children of immigrant and refugee families and children of Aboriginal ancestry, annual EDI administration will allow a more detailed analysis of these groups of children for use in targeted policies, programs and services. The EDI has been well accepted in Canada, but has also been nationally implemented in Australia and implemented across populations in other countries. Its success in Canada, in particular the provinces of Manitoba, British Columbia (BC) and Ontario, has been dependent on the following key developments:

- Child-centred government structures and mechanisms (the Healthy Child Committee of Cabinet in Manitoba, dedicated to children and youth and the Healthy Child Manitoba Strategy (Figure 5))
- Child-centred community structures and mechanisms (province-wide community coalitions that drive new incentives in the community and use of hubs such as Best Start Child and Family Centres and Aboriginal Friendship Centres within neighbourhoods to provide easy access for children and families and allow for the creation of services to meet the needs of that neighbourhood)
- Child-centred research organisations (Human Early Learning Partnership (HELP) produces group-level EDI information that is freely available to individuals, communities and senior governments to inform policies and programs)
- Policy integration of financial and social supports (15 by 15 Comprehensive Policy Framework)
- Government and community commitment to longitudinal research, evaluation and public reporting (including linking the EDI with socio-economic variables to determine which of these variables are most predictive of neighbourhood vulnerability)
- New annual cross-department early child development-centred budget process.

Methodological issues

In Australia, development and implementation of the AEDI is being co-ordinated from the Royal Children's Hospital, Melbourne and the necessary evidence and resources to support important next steps of policy and program implementation are still in development.

Important questions that will need to be answered as the AEDI is used to inform policy and programs are:

1. How does the AEDI add value to (or replace) information we already have about the health and wellbeing of children? Does it provide a different type or depth of information or is it easier to use?

2. Does the implementation of the AEDI lead to:
   a. policy and programs to improve child health and well-being?

b. new systems to monitor child health that are linked to federal, state and local services to improve child health and wellbeing?
c. new and effective ways of intersectoral working/collaboration?

3. Does implementation of the AEDI and the above activities improve child health and wellbeing?

Applicability to the NSW context

The AEDI is being implemented at a time of major change in NSW due to planned state (NSW Kids) and national (Federal Health Reform) restructures. This could provide the perfect opportunity to develop the systems that are required to support effective policy and program decision making and implementation based on AEDI results and state data linkage. It is unclear at this stage whether there is sufficient activity at the national centre in Melbourne to adapt AEDI findings for local contexts outside Victoria, but it seems likely that expertise closer to the point of implementation will be required and intersectoral working and working with charitable and business groups will need to be developed in each state. As NSW Kids is implemented in July 2010, strategic planning of the services that have worked in the Canadian Province context will need to be translated for NSW and placed, where possible, within existing or planned structures. Enhancements will be required to develop a child health service research centre (or equivalent) that can both interpret data provided nationally for local use and assist with development and implementation of relevant interventions for the local context.

Such a centre could also serve other important functions in relation to population child health. The current Families NSW system will need to be modified/adapted to provide a state-wide intersectoral forum with a level of functioning similar to those that have been most successful in Canada. In addition ways of working will need to be established that ensure links between the child health service research centre, the intersectoral state forum and local communities and services, either through Area Health Services in NSW, and the NSW Kids area-based appointments or, if National Health Reform occurs, through the newly formed 'Local Networks'. This will ensure community partnerships that best translate identified local needs to implementation of effective programs and their evaluation.

Other possible uses of the AEDI data that may be of interest to the Department, including linkage with other population-based data in NSW

The uses of the EDI data in Canada are extensive and could be replicated in Australia. Making best use of existing data in NSW to inform child health policy, programs and services and improve child health and wellbeing should be a priority. There is considerable expertise within NSW in regard to data-linkage (CHERL), considerable existing data that is currently underutilised and considerable expertise about child health

and disadvantaged communities in NSW amongst Community Child Health specialists. In addition the relationships that should be developed to achieve excellent intersectoral working for best use of the AEDI may also facilitate/further intersectoral data sharing and research collaborations. The child health service research centre, described above, would be an excellent opportunity to bring all this expertise together to inform population health policy and programs, community health services and interventions and the care of children with chronic conditions and disabilities across the state and in local communities, to prevent or minimise the impact of health problems on the lives of children and their families.

References

Peer-reviewed articles

Carpiano RMJE, Lloyd V and Hertzman C. (2007) Concentrated affluence, concentrated disadvantage, and children's readiness for school: A population-based, multi-level investigation. *Social Science & Medicine.* 69(3), 420-432.

Corter C, Patel S, Pelletier J and Bertrand J. (2008) The early development instrument as an evaluation and improvement tool for school-based, integrated services for young children and parents: The Toronto First Duty Project. *Early Education & Development*. 19(5), 773-794.

Goldfeld S, Sayers M, Brinkman S, Silburn S and Oberklaid F. (2009) The Process and policy challenges of adapting and implementing the early development instrument in Australia. *Early Education & Development. 20*(6), 978–991.

Guhn M, Gadermann A and Zumbo BD. (2007) Does the EDI measure school readiness in the same way across different groups of children? *Early Education & Development.* 18(3), 453-472.

Janus M and Duku E. (2007). The School Entry Gap: Socioeconomic, Family, and Health Factors Associated With Children's School Readiness to Learn. *Early Education & Development.* 18(3), 375-403.

Janus, M. and Offord, D. (2007). Development and psychometric properties of the Early Development Instrument (EDI): A measure of children's school readiness. *Canadian Journal of Behavioural Science*, 39, 1-22.

Lapointe VR , Ford L and Zumbo BD.(2007) Examining the Relationship Between Neighborhood Environment and School Readiness for Kindergarten Children. *Early Education & Development*. 18(3), 473-495.

Reports

Centre for Community Child Health, Royal Children's Hospital, Melbourne, Murdoch Children's Research Institute, Melbourne and the Telethon Institute for Child Health Research, Perth. (2009) A Snapshot of Early Child Development in Australia. Australian Early Development Index (AEDI) National Report. Australian Government Department of Education, Employment and Workplace Relations.
http://video.wch.org.au/aedi/A_Snapshot_of_Early_Childhood_Development_in_Australia-AEDI_National_Report_2009.pdf

Centre for Community Child Health, Royal Children's Hospital, Melbourne. (2007) Australian Early Development Index: Building Better Communities for Children: Final Evaluation Report.
http://www.rch.org.au/emplibrary/australianedi/AEDI_Final_Evaluation_Report_March_07.pdf

Healthy Child Committee of Cabinet. (2008) Annual Report of the Healthy Child Manitoba Office for 2007/8. Healthy Child Committee of Cabinet Office & Healthy Child Deputy Ministers Committee, Government of Manitoba. http://www.gov.mb.ca/healthychild/about/annual_report_2007_08.pdf

Kershaw P, Anderson L, Warburton B and Hertzman C. (2009) 15 by 15: A Comprehensive Policy Framework for Early Human Capital Investment in BC. Human Early Learning Partnership & Government of British Columbia. http://www.earlylearning.ubc.ca/wp-uploads/2010/02/2009-09_15-by-15-Brief-Exec-Summary.pdf

Schroeder J, Harvey J, Razaz-Rahmati N, Corless G, Negreiros J, Ford L, Kershaw P, Anderson L, Wiens M, Vaghri Z, Stefanowicz A, Irwin LG and Hertzman C. (2009) Creating Communities for Young Children: A Toolkit for Change. Human Early Learning Partnership.

Kershaw P, Irwin L, Trafford K and Hertzman C. (2005) The BC Atlas of Child Development. Human Early Learning Partnership & Western Geographical Press. ISBN 0-919838-30-8. http://www.earlylearning.ubc.ca/wp-uploads/2010/02/BCAtlasofChildDevelopment_CD_22-01-06.pdf

Janus M, Brinkman S, Duku E, Hertzman C, Santos R, Sayers M, Schroeder J and Walsh C. (2007) The Early Development Instrument: A Population-based Measure for Communities: A Handbook on Development, Properties and Use. Offord Centre for Child Studies & Government of Ontario, Canada. ISBN 978-1-894088-84-8. http://www.offordcentre.com/readiness/pubs/2007_12_FINAL.EDI.HANDBOOK.pdf.

McCain MN, Mustard JF and Shanker S. (2007) Early Years Study 2: Putting Science into Action. Council for Early Child Development, Ontario. http://www.councilecd.ca/files/downloads/Early_Years.pdf

Pascal CE. (2009) With Our Best Future in Mind: Implementing Early Learning in Ontario. Report to the Premier of Ontario by the Special Advisor of Early Learning. Government of Ontario. http://www.ontario.ca/en/initiatives/early_learning/ONT06_018865

Sanson A, Nicholon J, Ungerer J, Zubrick S, Wilson K, Ainley J, Berthelsen D, Bittman M, Broom D, Harrison L, Rodgers B, Sawyer M, Silburn S, Strazdins L, Vimpani G and Wake M. (2002) Introducing the Longitudinal Study of Australian Children. Canberra: Australian Institute of Family Studies. http://www.aifs.gov.au/growingup/pubs/discussion/dp1/discussionpaper1.pdf

Willms JD (2005) Understanding the early years: An update of early childhood development results in four Canadian communities. KRI Research International Inc. http://www.hrsdc.gc.ca/eng/cs/sp/sdc/pkrf/publications/research/2005-072005/UEYfourcommunities.pdf

Figure 1. Application of EDI across Canada

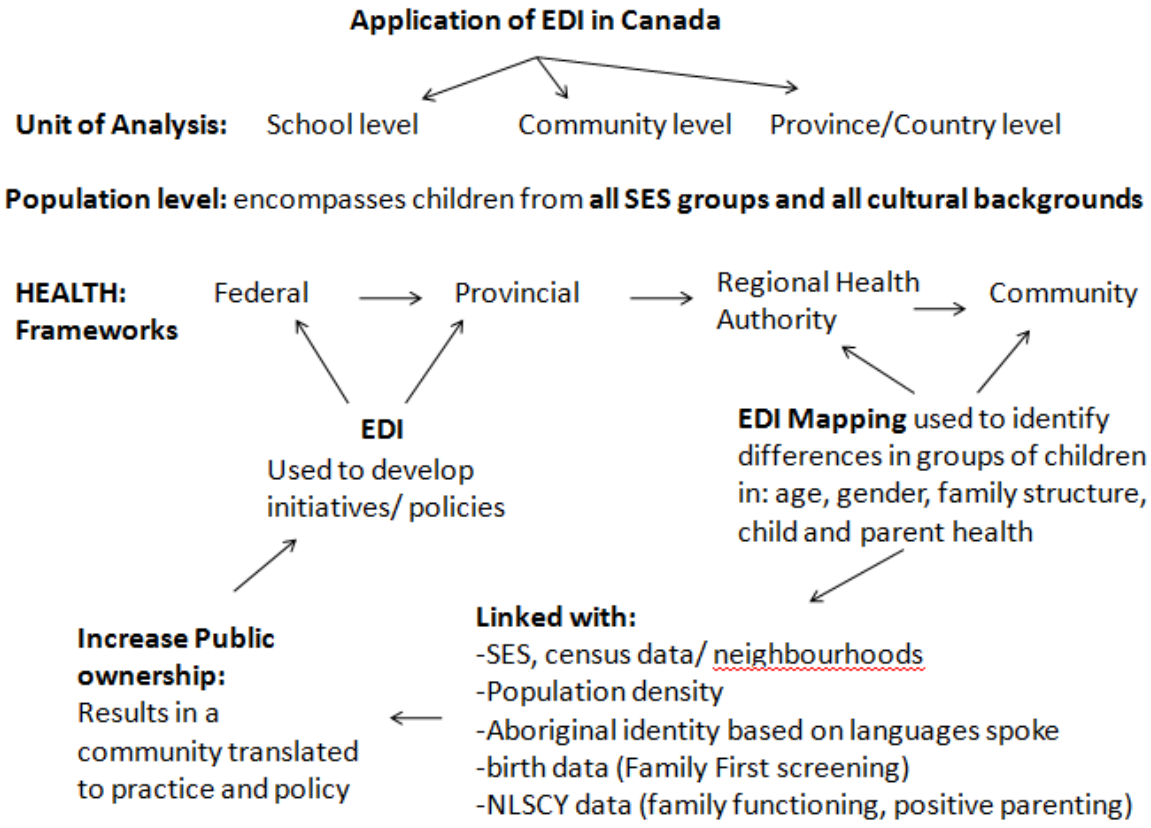


Figure 2. Percentage of Aboriginal children vulnerable on the physical well-being scale (cited from the BC Atlas of Child Development, Human Early Learning Partnership, BC, pp83**).**

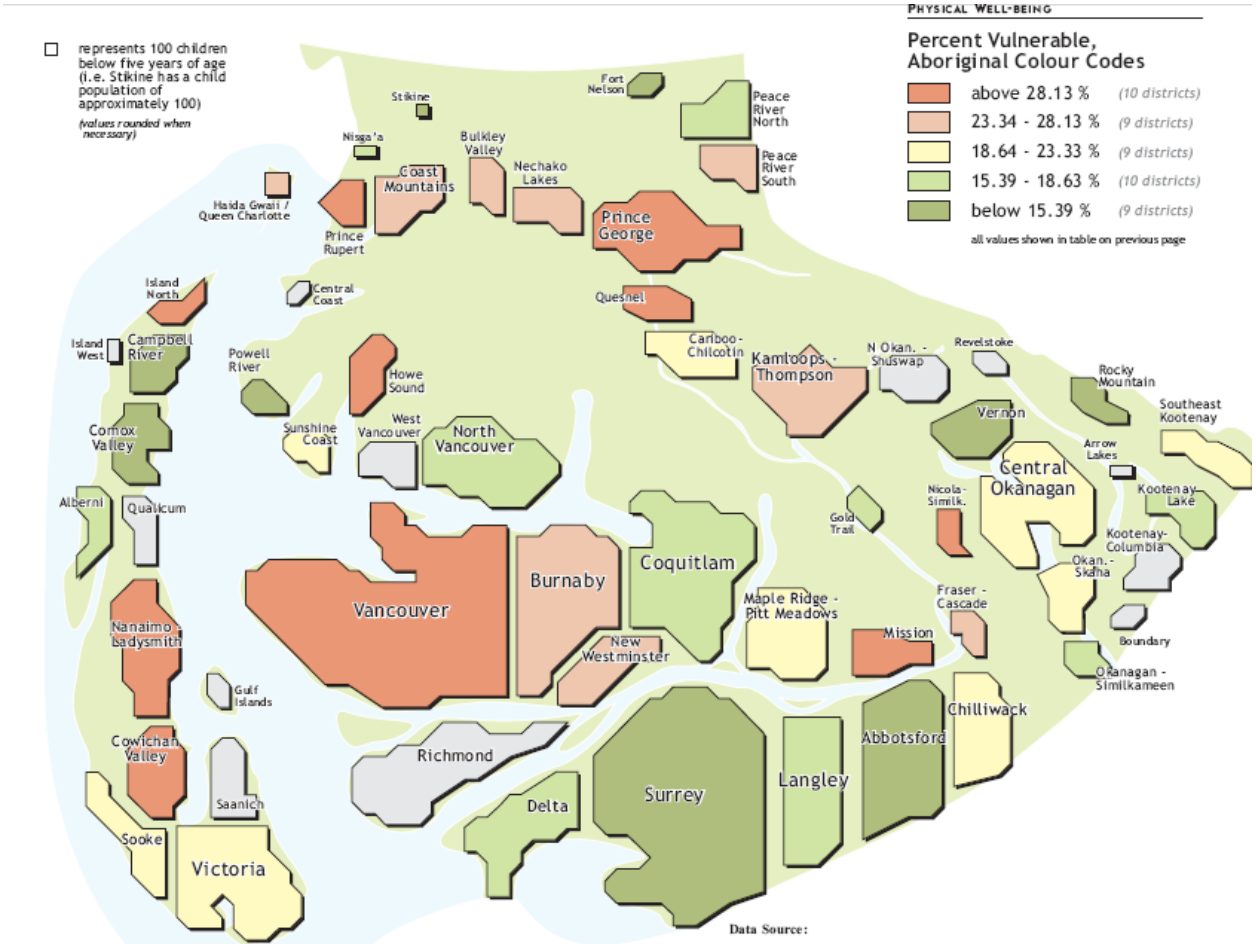


Figure 3. Linkage of population-based data including the EDI (cited from Brownell M and Charter M. Data Linkage in Manitoba. The Early Development Imperative: A Pan-Canadian Conference on Population level Measurement of Children's development, 2009, Winnipeg, MB)**.**

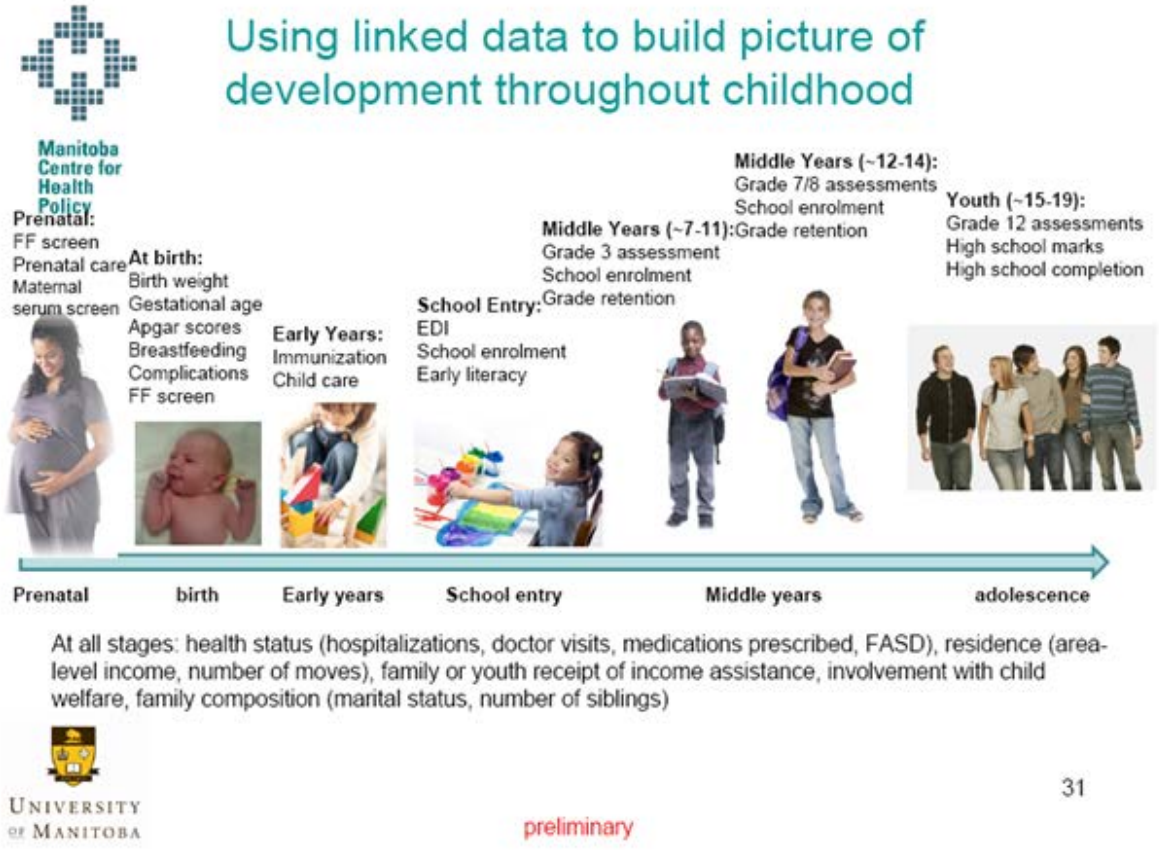


Figure 4. Linkage of population-based data including the EDI (cited from Hertzman C. Creating trajectories of early human development. 2009. Council for Early Childhood Development)**.**

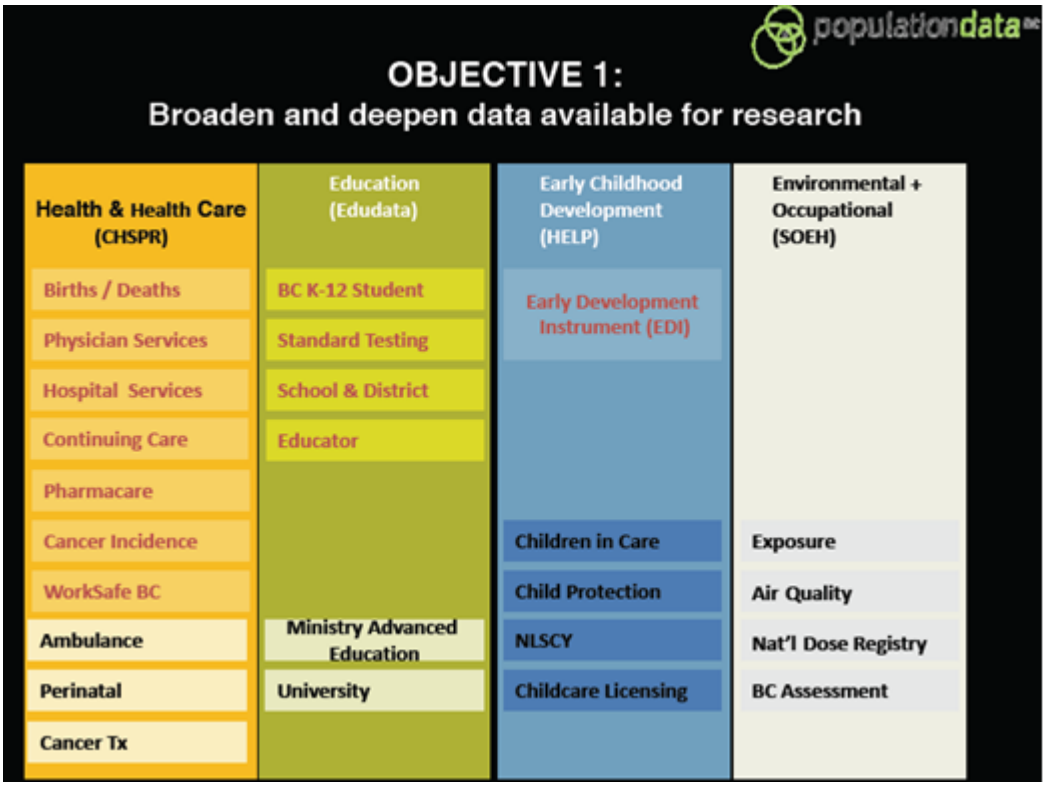
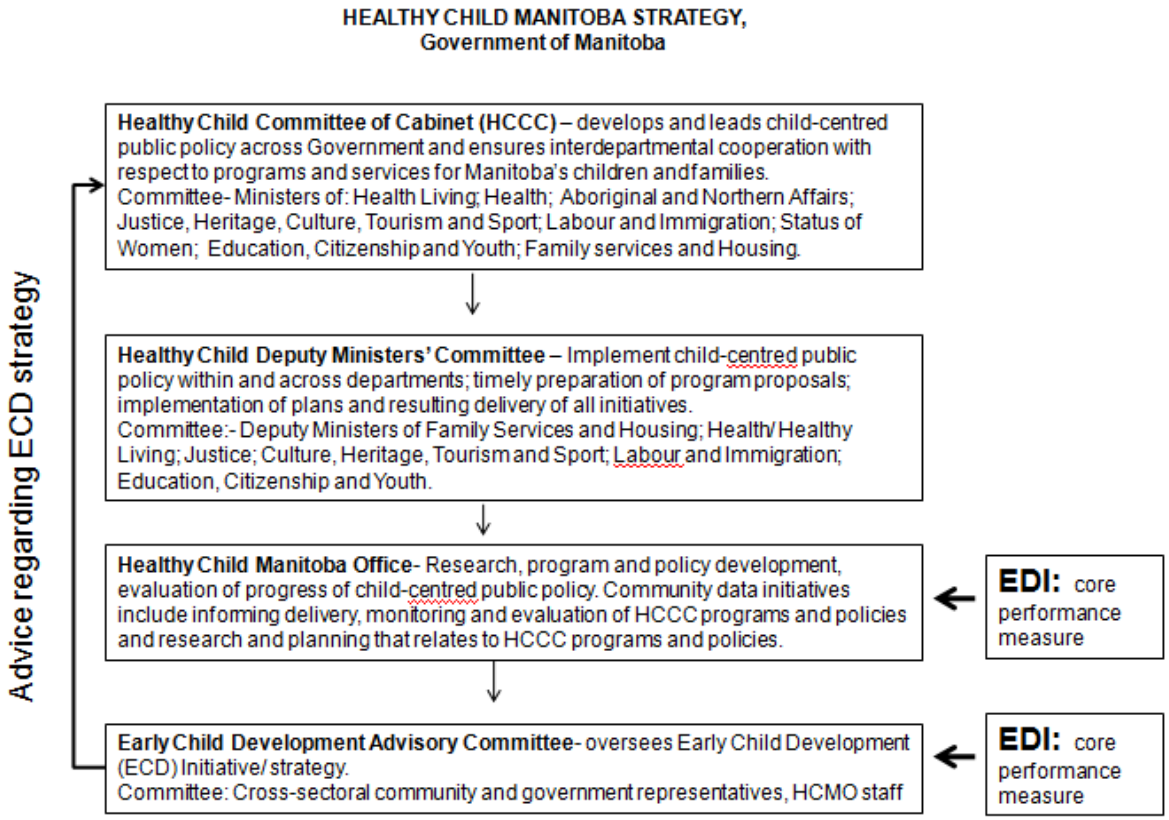


Figure 5. The Health Child Manitoba Strategy



Appendix 1. Search terms and strategies used for online academic databases

Key MeSH term	Terms covered
	"early development instrument".tw
Early child development	early childhood development/ Mother-Child Relations/parent child relations/language development/psychosocial development/infant development/ early experience/early intervention/mothers/ cognitive development
AND	
Educational measurement *OR* Psychometrics	All subheadings
AND	
Policy making *OR*	Health Planning/ or Health Policy/ or Community Health Services/ or Family Planning Services/ or Policy Making/ or "Delivery of Health Care"
Health care policy *OR*	Health policy/ or public policy/ or health services research/ or public health, outcome assessment (healthcare)
Health care programs *OR*	Health Education/ or National Health Programs/ or Public Health/ or Health Promotion/ or Public Health Administration
Social programs *OR*	
Neighbourhoods *OR*	Residence characteristics/ community health services/ socioeconomic factors
Indigenous	

Appendix 2. Websites review for grey literature

Location	Key term	Website
Australia	AEDI National Support Centre	www.australianedi.org
	Murdoch Children's Research Institute, WA	http://www.mcri.edu.au
	Centre for Community Child Health, University of Melbourne	www.rch.org.au/ccch/index.cfm?doc_id=10693
	Department of Families and Housing, Community Services and Indigenous Affairs (FAHCSIA)	www.facs.gov.au/sa/families/progserv/Child_Abuse_Prevention/nfpac/Pages/gov_commitment.aspx
Canada/ Manitoba	Manitoba Centre for Health Policy	http://www.umanitoba.ca/medicine/unts/mchp/
	Government of Manitoba: Healthy Child Manitoba Office	http://www.gov.mb.ca/healthychild/
Canada/ British Columbia (BC)	Government of British Columbia, Ministry of Child and Family Development	http://www.mcf.gov.bc.ca
	Human Early Learning Partnership	http://www.earlylearning.ubc.ca/
Canada/Ontario	Government of Ontario, Ministry of Youth and Children's Services	http://www.ontario.ca
	Offord Centre for Child Studies (OCCS), McMaster University, Canada	http://www.offordcentre.com/readiness/index.html
Canada	Council for Early Childhood Development (CECD)	www.councilecd.ca/

Appendix 3. Application of the EDI in different countries[1]

Country/Province	Application of EDI								
	Monitoring system	Pilots	Inform program evaluation	Population-level implement EDI	Small research studies	Influence health, social, community policy/ programs	Inform policy/ programs in indigenous communities	Data linkage to inform policy/ programs in health	Predictive measure of health outcomes
Canada/ Manitoba (Mb)			✓	✓		✓	✓	✓	✓
Canada/ British Columbia (BC)			✓	✓		✓	✓	✓	✓
Canada/ Ontario			✓	✓		✓	✓	✓	✓
Australia (AEDI).			✓	✓		✓			
Chile				✓					
England					✓				
Holland					✓				
Indonesia			✓						
Ireland					✓				
Jamaica	✓		✓						
Kenya		✓							
Kosovo			✓						
Mexico				✓					
Moldova		✓							
Mozambique			✓						
New Zealand			✓						
USA				✓					

[1] Janus M and Brinkman S. (2009) *The impact and reach of the EDI around the world*. The Early Development Imperative: A Pan-Canadian Conference on Population level Measurement of Children's development. http://www.councilecd.ca/files/PanCanadianEDI_JanusBrinkman.pdf.

Appendix 4. Use of EDI to inform policy and program decisions in health, social and community sectors and indigenous populations, as well as evidence on data linkage with other population databases and its use as a predictive measure (peer reviewed articles)

	Use of EDI to inform policy and program decisions in health, social and community service sectors, Indigenous populations, population database linkage and predictive validity	Location	Relevant Review Question
Paper/Report/ Presentation	*Concentrated affluence, concentrated disadvantage, and children's readiness for school: A population-based, multi-level investigation.* Carpiano RM, Lloyd JEV, Hertzman C. Social Science & Medicine. 2009; 69: 420–432.	Canada/ BC	5
Brief description	This study investigated the relationship between neighbourhood-level concentrated affluence/disadvantage and child-level developmental outcomes in a study population of 37,798 Kindergarten children residing in 433 neighbourhoods throughout the province of British Columbia, Canada. A previously-validated measure of neighbourhood socioeconomic composition−the Index of Concentration at the Extremes (ICE) was examined and related to the EDI.		
Policy/ program context	Informing interventions and policies for improving population health in Canada and elsewhere.		
Main findings	Increases in neighbourhood affluence are associated with increases in children's scores on the EDI. In particular, four of the five EDI scales (physical, social, emotional, and communication) and the total EDI score results indicate a significant curvilinear relationship- whereby the highest average child-level outcomes are not found in locations with the highest concentrations of affluence, but rather in locations with relatively equal proportions of affluent and disadvantaged families. This finding suggests, first, that concentrated affluence may have diminishing rates of return on contributing to enhanced child development, and second, that children residing in mixed-income neighbourhoods may benefit both from the presence of affluent residents and from the presence of services and institutions aimed at assisting lower-income residents.		
Quality and strength of findings	1. Research is focused on the most comprehensive population-based data on early child development (ECD) in Canada. 2. Used a multi-level approach to explore the relationship between young children and their residential environments, allowing for more reliable estimation of neighbourhood effects, the separation of neighbourhood-level effects from child-level effects. 3. Utilised a previously-validated measure of neighbourhood socioeconomic composition –ICE –a more precise estimation of the competing influences of concentrated affluence and disadvantage as well as the potential impact of neighbourhood-level income inequality. 4. Tested two competing hypotheses about the relationship between concentrated affluence and disadvantage and health and developmental outcomes. 5. Limitations: use of proxy measures when information not available, potential selection bias in relation to neighbourhoods assessed, unable to control for a broader range of child and family level variable.		

	Use of EDI to inform policy and program decisions in health, social and community service sectors, Indigenous populations, population database linkage and predictive validity	Location	Relevant Review Question
Recommendations/ implications	Using this approach, population health researchers can investigate in a more focussed manner the mechanisms that connect variations in neighbourhoods' characteristics with the overall health and development of its young children.		
Method or measurement issues	Study utilised the 2002 median equivalised disposable income as a proxy for family-level SES, simply because family-level socioeconomic status data were unavailable to us.		
Paper/Report/ Presentation	*The early development instrument as an evaluation and improvement tool for school-based, integrated services for young children and parents: The Toronto First Duty Project.* Corter C, Patel S, Pelletier J, Bertrand J. Early Education and Development. 2008; 19(5): 773-794.	Canada	1&2
Brief description	Integrated services for young children and families are part of the new policy landscape in early childhood, but there is limited evidence of the effectiveness of these programs and how they develop on the ground. This study examined the use of the Early Development Instrument (EDI) as both a summative program evaluation tool and as a formative program improvement tool supporting practitioners in Toronto First Duty (TFD), an integrated services demonstration project that combined kindergarten, child care, and parenting supports in public schools. Mixed methods and multiple measures were used to contextualize summative findings in case studies across demonstration sites.		
Policy/ program context	The study examines the role of the EDI in program evaluation and in improvement of practice. Informs of potential value of integrated early childhood services and the challenges of evaluating complex community initiatives.		
Main findings	Pre-post comparisons at community demonstration sites and comparisons with matched community sites using the EDI suggested that the demonstration program was associated with modest improvements in emotional and social domains of children's development. Over the course of implementation, the integrated program environment quality ratings and EDI scores improved in relevant areas assessing quality of interaction and social-emotional development.		
Quality and strength of findings	The case studies explored how integration was implemented at different sites and how dimensions of enacted integration might contribute to positive outcomes for children and families. A case study of one site showed how an integrated staff team used EDI school-level profiles, along with formative feedback on program quality, to target and improve programming.		
Recommendations/ implications	The community and district level of EDI administration provides a common platform for engaging multiple stakeholders in the findings on early child development at the same time that it permits the evaluation of program effects at the school level. At a provincial and national level, the TFD model was highlighted in a reissue of an influential early years policy document, the *Early Years Study 2* (McCain, Mustard, & Shanker, 2007), as an example of integrated early childhood programming central to an integrated system. It used the TFD experience to propose specific public policies necessary to move from fragmented program delivery to a coherent early years system in Ontario and elsewhere in Canada. This is a key finding from the current evaluation. The EDI contributed to		

	Use of EDI to inform policy and program decisions in health, social and community service sectors, Indigenous populations, population database linkage and predictive validity	Location	Relevant Review Question
	evidence-based practice and program improvement and thus to attention in policy development.		
Method or measurement issues	The EDI was a useful part of the evaluation strategy in this project, but further exploration of its effectiveness in program evaluation and community reform efforts is warranted. Issues to consider include bias in teacher reporting and differential sensitivity for different domains of the EDI in detecting real differences.		
Paper/Report/ Presentation		Canada	5
Brief description	Explore factors in 5 areas of risk: socioeconomic status, family structure, child health, parent health, and parent involvement in literacy development in relation to the outcomes from the EDI.		
Policy/ program context	Provide additional and much-needed evidence on the instrument's sensitivity at the individual level, thus paving the way for its use in interpreting children's school readiness in the context of their lives and the communities in which they live.		
Main findings	A child's odds of being vulnerable in school readiness were the strongest for having suboptimal versus good health, for being a boy (2.3x) versus being a girl, and for a child coming from a low-income family versus not (2x). Broken family, younger age, not looking at books with parents, and parent smoking also increased the likelihood of vulnerability, albeit not as strongly as the previous three factors. Among child health variables, less than perfect health had a higher odds ratio for school readiness vulnerability than low birth weight or the concurrent rating of a child's health (possibly due to the fact that the HUI comprises all the functional areas of a child's well-being rather than being narrowly focused on one).		
Quality and strength of findings	Sample has been drawn randomly using an established methodology, therefore authors are confident that there was no intended systematic bias. Data collected for the study came from the Community Component of the National Longitudinal Survey of Children and Youth (NLSCY; Statistics Canada, 1999). The parent household interview was carried out using the same procedure as in the routine 1998–1999 NLSCY data collection (Statistics Canada, 1999). Content of the interview covered sociodemographics, parents' education, labour force activity, income, health, children's health, literacy activities, development, and other issues. The Health Utilities Index, a generic, well validated measure was used to measure functional status of the child (HUI; Horseman, Furlong, Feeny, & Torrance, 2003).		
Recommendations/ implications	School readiness, as measured by the EDI, varied in relation to socioeconomic, health, and family structure variables and that there was indeed a gap in school readiness among kindergarten. Suboptimal functional health, being a boy, and living in a family with low income increased a child's likelihood to be at the bottom side of the gap. These factors can be targeted using preventive strategies aimed at decreasing the school readiness gap The		

	Use of EDI to inform policy and program decisions in health, social and community service sectors, Indigenous populations, population database linkage and predictive validity	Location	Relevant Review Question
	analyses present the EDI as an instrument sensitive to individual-level variables, however, the results can be taken to the population level and related to population trends.		
Method or measurement issues	The methodology used was cross-sectional, not allowing for a temporal investigation of cause and effect. The analyses depended on the dichotomous variables of risk and outcome which limits variability and thus may obscure some more subtle relationships The sample on which our investigation was based had higher SES than the large population from which it was drawn, raising questions about the representativeness and generalisability of the results.		
Paper/Report/ Presentation	*Examining the relationship between neighbourhood environment and school readiness for kindergarten children.* Lapointe VR, Ford L, Zumbo BD. Early Education and Development. 2007; 18(3): 473-495.	Canada	5
Brief description	This study investigated the relationship between neighbourhood environment and school readiness. To measure neighbourhood environment, data from the 2001 Canadian Census were used, while school readiness was measured using the Early Development Instrument (EDI). EDI data were collected for kindergarten children across BC in the school years 2000-2001 through 2004-2005 (53,059 children). A hierarchical linear modelling (HLM) approach to data analysis was taken given the complex structure of the data (children nested within neighbourhoods). Following these analyses, an exploratory analysis of neighbourhoods where children had performed better or worse than expected on the EDI (according to the HLM models) was performed to better understand what differentiates these neighbourhoods from those where children had performed according to the model predictions.		
Policy/ program context	To further understand the components of the neighbourhood context that are related to children's school readiness outcomes in the BC context such that at-risk groups of children and neighbourhoods can be more easily identified, and resources for prevention and intervention appropriately allocated.		
Main findings	Results from this study suggest that neighbourhood environment is related to children's school readiness outcomes as measured by the EDI. Specifically, all five EDI domains and the EDI Total score were significantly predicted by between two and eight of 13 neighbourhood variables that were conceptually grouped into eight categories accounting for family structure, income, education, aboriginal status, language, labour force occupations, employment rates, and domestic work. Important patterns included differences in residential stability, proportion of immigrants and lone-parents, employment rates, types of occupations and industries, amount of domestic work, male-female income discrepancy, and income levels. Overall, three themes emerged from this study suggesting neighbourhood-level sources of social wealth: the importance of neighbourhood culture, stability, and heterogeneity in promoting better school readiness outcomes for children.		
Quality and strength of findings	An HLM approach to research of this nature allows the researcher to account for the complex structure of the data (children nested within neighbourhoods). The current study focus was on young children as compared to the majority of neighbourhood effects research that has been completed with adolescent samples. Analysis of large-scale national data sets is useful in delineating overall patterns and providing a starting place for more in-depth investigations of neighbourhood effects in specific neighbourhoods.		

Appendix 5. Use of EDI to inform policy in health, social and community sectors (grey literature: Questions 1 & 2).

Policy informed/ influenced by the EDI (EDI as a core performance measure)	Source (see References for Report links)
Canada: Manitoba	
The Healthy Child Manitoba Act (1999): The purpose of this Act is to guide the development, implementation and evaluation of the Healthy Child Manitoba strategy in the government and in Manitoba communities. Health Child Manitoba (HCM) Strategy (2000): Long-term, cross-departmental, evidence-based prevention and early intervention strategy to improve outcomes for all of Manitoba's children and youth (prenatal to18 years). (Figure 5).	Report: *Annual Report of Manitoba's Health Child Manitoba Office for the year 2007/08*. Healthy Child Committee of Cabinet, Government of Manitoba. Presentation: *EDI in Manitoba: Promoting best outcomes for Manitoba's children through evidence-based decision making*. The Early Development Imperative: A Pan-Canadian Conference on Population level Measurement of Children's development, Nov 16, 2009, Winnipeg, MB: Rob Santos, Healthy Child Manitoba Office, Healthy Child Committee of Cabinet, Government of Manitoba. http://www.manitoba.ca/healthychild/edi/pancan/pres_edimb.pdf
Treasury Board Planning and Budgeting: new child-centred budget process and New government planning process using EDI as a core performance measure for HCM strategy.	Presentation: *EDI in Manitoba: Promoting best outcomes for Manitoba's children through evidence-based decision making*. The Early Development Imperative: A Pan-Canadian Conference on Population level Measurement of Children's development, Nov 16, 2009, Winnipeg, MB: Rob Santos, Healthy Child Manitoba Office, Healthy Child Committee of Cabinet, Government of Manitoba (see website above).
Canada: British Columbia (BC)	
Children First Initiative: Support communities to identify and develop an integrated and comprehensive model of ECD service delivery for children 0 to 6 years and their families.	Ministry for Children and Family Development, Government of British Columbia (MCFD) http://www.mcf.gov.bc.ca/early_childhood/index.htm
Success By 6® Success By 6® in BC is a joint initiative of United Way, Credit Unions of BC, BC Government through MCFD, and community partners. The initiative is dedicated to ensuring that children ages 0 to 6 years have access to resources and programs that support their healthy growth and development. Success By 6® builds community through engaging citizens in building child and family friendly communities and funding programs that include literacy, nutrition, children's play, parenting and family skills development.	Ministry for Children and Family Development, Government of British Columbia http://www.mcf.gov.bc.ca/early_childhood/index.htm
Understanding the Early Years Initiative (UEY): Understanding the Early Years is a national initiative that enables members of communities across Canada to better understand the needs of their young children and families so that they can determine the best programs and services to meet those needs. The EDI was developed to measure early childhood development at UEY sties in 2000-01.	Report: *Understanding the early years: An update of early childhood development results in four Canadian communities.* 2005. Willms. JD. KRI Research International Inc. A combined initiative of the Human Resources and Social Development Canada

Policy informed/ influenced by the EDI (EDI as a core performance measure)	Source (see References for Report links)
	(HRSDC) & Ministry for Children and Family Development, Government of British Columbia.
Canada: Ontario	
Best Start Initiative: To strengthen healthy development, early learning, and child care services during a child's first year so that children in Ontario will be ready and eager to learn by the time they start Grade 1. *A Best Start Initiative:* Early Learning for Every Child Today (ELECT): *A Framework for Ontario Early Childhood Settings* that describes how young children learn and develop, and provides a guide for curriculum in Ontario's early childhood settings, including child care centres, regulated home child care, nursery schools, kindergarten, Ontario Early Years Centres, family resource programs, parenting centres, readiness centres, family literacy, child development programs in Community Action Program for Children, Healthy Babies Healthy Children and early intervention services.	Report: *Early Years Study 2: Putting Science into Action*.2007. M.N. McCain, J. F. Mustard, S. Shanker, The Council for Early Child Development. Report: *With our Best Future in Mind. Implementing Early Learning in Ontario*. 2009. A Report to the Premier and Cabinet Office, Government of Ontario. C.E Pascal, Special Advisor on Early Learning.
Australia	
National Framework for Protecting Australia's Children: Implementing the first three-year action plan 2009-2012: Designed to provide the foundation for national reform to ensure that *Australia's children and young people are safe and well*. AEDI is being used as an indicator of the proportion of communities with improved child measures over time, across the AEDI domains.	Australian Government, Department of Families Housing, Community Services and Indigenous Affairs: http://www.fahcsia.gov.au/sa/families/pubs/Protecting_children/Pages/3_progress_rpt.aspx

Appendix 6. Use of EDI to inform programs in health, social and community sectors (grey literature: Questions 1 & 2).

Programs informed by EDI data	Source
Canada: Manitoba	
Triple P- Positive Parenting Program (for 0−5). Province wide phase in from Nov 2005. Provides parents with access to parenting supports, information and strategies. Service providers from various sectors are being trained to provide the program.	Report: *Annual Report of Manitoba's Health Child Manitoba Office for the year 2007/08*. Healthy Child Committee of Cabinet, Government of Manitoba.
Parent-child coalitions: Community development approach includes representation from parents, school divisions, early childhood educators, health professionals and other community organizations. Core priorities of Coalition activities include positive parenting, nutrition and physical health, literacy and learning, and community capacity. Funding provided by the Children First Initiative and Success by 6. There are 26 parent-child coalitions across the province, organized within the 11 regional health authority (RHA) boundaries outside Winnipeg and the 12 Community Areas within Winnipeg. Three cultural organizations receive funding. HCMO hosts an annual Provincial Forum to provide coalition members and community partners with professional development and networking opportunities. Examples of Parent-Child Coalitions: http://www.factcoalition.org/cms/; http://communities4families.ca/programs Example of EDI information provided to a Parent-child Coalition: http://www.gov.mb.ca/healthychild/edi/edi_0506/edi_bra_0506.pdf	Report: *Annual Report of Manitoba's Health Child Manitoba Office for the year 2007/08*. Healthy Child Committee of Cabinet, Government of Manitoba: *EDI in Manitoba*. The Early Development Imperative: A Pan-Canadian Conference on Population level Measurement of Children's development, Nov 16, 2009, Winnipeg, MB: T. Johnston, Healthy Child Manitoba Office. http://www.councilecd.ca/files/PanCanadianEDI_JohnstonChurch.pdf
Francophone Early Childhood Development (ECD) – Hub Model: School-based model designed to provide a comprehensive continuum of integrated services and resources for minority language parents of children from prenatal through to school entry, including universal resources for increasing support and education of parents, access to specialized early intervention services such as the provincial Healthy Baby program, as well as comprehensive speech/language and other specialized developmental/learning services.	Report: *Annual Report of Manitoba's Health Child Manitoba Office for the year 2007/08*. Healthy Child Committee of Cabinet, Government of Manitoba:
Canada: BC	
Intersectoral community coalitions: Involve ECD community representatives of multiple related agencies, such as schools, health, social services, municipal services, and business. EDI data allows the coalition to analyze local needs and plan collaboratively for re-allocation of resources and to advocate for new resources and programs. Health, social services, and other community agencies are centralizing services in schools and other sites with a view to providing integrated services for families. Example of an Intersectoral Community Coalition: Vancouver Windows of Opportunity Coalition for Children and Youth: a Children's First Initiative: http://vancouverwindowsofopportunity.com/index.html	Report: *Early Years Study 2: Putting Science into Action*.2007. M.N. McCain, J. F. Mustard, S. Shanker, The Council for Early Child Development.

Programs informed by EDI data	Source
Family Resource Programs (FRPs) are also known as Neighbourhood Houses or Family Places. They offer prevention oriented family development services for families with children 0 - 6 years of age. Some examples of FRPs include: drop-in for parents, caregivers and children; parent education workshops; peer counseling; clothing exchanges; community kitchens; nutrition education; health screening and education; and literacy and ESL for parents.	Ministry for Children and Family Development , BC. http://www.mcf.gov.bc.ca/early_childhood/family_resource.htm
Canada: Ontario	
Best Start Child and Family Centres providing pre- and post-natal information, support/ home visits, parent/ child programming and parenting information, nutrition information/ counselling, flexible early learning, early identification and intervention and links to community resources. Guided by ELECT (a framework under the Early Years Policy Framework)	Report: *With our Best Future in Mind. Implementing Early Learning in Ontario*. 2009. A Report to the Premier and Cabinet Office, Government of Ontario. C.E Pascal, Special Advisor on Early Learning.
Australia	
Application of the AEDI across 60 communities in Australia. In the Mirrabooka region of Western Australia, the AEDI has been completed four times (2003-2009), the results of which have been used to inform and implement change including supporting the planning of the Australian Government's initiative "Communities for Children" across that region, including a literacy link project and community parks project. In the Mornington Peninsula community, the AEDI was completed in 2005 and 2008. In response to AEDI results, a range of activities and evidence-based programs have been put in place across the region to assist with early childhood development. Two cases studies: Mirrabooka and Mornington Peninsula: http://training.aedi.org.au/secondary-pages/about-the-video-case-studies.aspx Other community profiles can be viewed at http://www.australianedi.org	Report: *Australian Early Development Index: Building Better Communities for Children: Final Evaluation Report*. Centre for Community Child Health, Royal Children's Hospital, Melbourne. (2007).

Appendix 7. Policy implications/ recommendations in relation to the use of the EDI (grey literature: Questions 1 & 2).

Policy implications/ recommendations	Source
Canada: Manitoba	
Pressing policy priorities: Language and cognitive development consistently Manitoba's worst outcome: need for more effective literacy interventions. Vulnerable boys: Boys more vulnerable in social competence (2.1x) and emotional maturity (2.2x), after controlling for age and Aboriginality. Reducing SES inequities: Two distinct groups of children: "not ready" (28%) and "very ready" (62%) with only 5% overlap, defined in large part by family SES. For Aboriginal children: "not ready" (45%) and "very ready" (46%), with only 8% overlap, defined in large part by family SES. Closing the gap for aboriginal children: For Aboriginal children, more likely to not be ready in physical (2.7x), social (2.1x) and language (1.9x), i.e. aboriginal gap persists even after controlling for child gender and family SES (but gap in "very ready" disappears after controlling for gender and family SES). Population reach: success for all: Most vulnerable children in Manitoba are neither low SES nor Aboriginal. If targeted low SES group, 62% of vulnerable children would miss out. Only 30% of vulnerable children are Aboriginal. Significant change in future EDI results is unlikely without reaching all vulnerable children, e.g., across SES gaps, through both universal and targeted programs.	Presentation: *EDI in Manitoba: Promoting best outcomes for Manitoba's children through evidence-based decision making.* The Early Development Imperative: A Pan-Canadian Conference on Population level Measurement of Children's development, Nov 16, 2009, Winnipeg, MB: R. Santos, Healthy Child Manitoba Office, Healthy Child Committee of Cabinet, Government Manitoba (weblink above).
Canada: BC	
15 by 15: A Comprehensive Policy Framework for Early Human Capital Investment in BC. 2010: This report quantifies the costs and benefits of addressing early vulnerability in BC and provides recommendations in relation to time, resource and service: 1. enhance parental leave taken by both parents to provide more time to care personally; 2. revise employment standards to reduce work-life conflict after parental leave; 3. expand financial support for low-income families; 4. expand access to high quality early learning and child care services after parental leave; 5. provide regular opportunities for monitoring of children's healthy development ; 6. promote ongoing coordination and integration of early years' services in communities.	Report: *A Comprehensive Policy Framework for Early Human Capital Investment* Paul Kershaw & Lynell Anderson. 2010. Human Early Learning Partnership (HELP), University of British Columbia. Commissioned by Business Council, BC. Prepared for the Council for Early Child Development (CECD) Investing in Early Child Development, April 7, 2010.

Appendix 8. Use of EDI to inform policy/ programs in relation to indigenous populations (grey literature: Question 3).

Policy or program decisions informed/ influenced by the EDI	Source
Canada: Manitoba	
Parent-child coalitions for Indigenous Communities organised through the Manitoba Association of Friendship Centres: primarily funded by the Department of Canadian Heritage, but autonomous in running their own affairs, these voluntary associations sponsor activities such as cultural events, classes, dances, sports and recreation, job-training and educational services, programs, and economic cooperatives, child care facilities, housing/shelters, and are often located in urban areas. Parent-child centered activities focus on culturally appropriate parenting and family support, nutrition, literacy, and community capacity building as priority areas for healthy child development.	Manitoba Association of Friendship Centres. http://www.mac.mb.ca/web/ Report: *Annual Report of Manitoba's Health Child Manitoba Office for the year 2007/08*. Healthy Child Committee of Cabinet, Government of Manitoba:
Canada: BC	
Aboriginal Early Childhood Development (AECD) Initiative is focused on supporting comprehensive, integrated and culturally sustainable community-based programs in Aboriginal communities throughout British Columbia. There are currently 43 Aboriginal ECD programs in BC which aim to increase the health and well-being of Aboriginal children, strengthen the capacity of Aboriginal communities to deliver a full range of services, increase awareness, outreach and access to a wide range of culturally appropriate ECD programs and services for Aboriginal children, families and communities.	Ministry for Children and Youth Development. http://www.mcf.gov.bc.ca/early_childhood/index.htm Atlas: *British Columbia Atlas of Child Development*. (2005). P. Kershaw, L Irwin, K, Trafford, C. Hertzman. Human Early Learning Partnership and Western Geographical Press. Ontario, Canada. See pages 82-85, Figure 2 for an example of EDI mapping.

Appendix 9. Linkage of EDI to other population-based databases (grey literature: Questions 4).

Linkage with other population-based databases	Source
Canada: Manitoba	
Linking of EDI data to prenatal data: Families First (FF) Screen, maternal serum screen; birth data: birth weight, gestational age, apgar scores, breastfeeding complications, FF screen, school enrolment data, early literacy data, Grade 3, 7/8 and 12 assessments, to build a picture of development throughout childhood, prenatal through to teenagers (15-19yrs).	Presentation: *Data Linkage in Manitoba.* The Early Development Imperative: A Pan-Canadian Conference on Population level Measurement of Children's development, Nov 16, 2009, Winnipeg, MB. Marni Brownell, Manitoba Centre for Health Policy *& Mariette Charter,* Healthy Child Manitoba Office, Government of Manitoba. http://www.manitoba.ca/healthychild/edi/pancan/pres_linkage.pdf
Linkage of EDI data to information from the EDI Parent survey performed in Manitoba (two random population sample surveys of 1000 parents in 2004 and 2006): Neighbourhood safety, Family functioning, Parental depression, Hostile parenting, percentage of children involved in physical activity.	Presentation: *EDI in Manitoba: Promoting best outcomes for Manitoba's children through evidence-based decision making*. The Early Development Imperative: A Pan-Canadian Conference on Population level Measurement of Children's development, Nov 16, 2009, Winnipeg, MB: Rob Santos, Healthy Child Manitoba Office, Healthy Child Committee of Cabinet, Government of Manitoba (web-link above).
Canada: BC	
BC Atlas provides an extensive range of information about child development in local neighbourhoods, school districts and health regions, as well as across the entire province. EDI data (from individual domains to all domains) is linked with SES data. EDI Maps are also aligned with hospitalisation rates, child care places, closure of child care facilities, income rate assistance, children <7 years of age in Care of State, Aboriginal children in Care of State. The atlas describes how to use and interpret the information provided and gives examples of community programs that have arisen in response to the data. The Human Early Learning Partnership intends this information to play a role in community, regional and provincial development by empowering residents and policy makers with sufficient evidence-based information to make solid program and policy decisions that cater to the needs of children occupying spots along the entire EDI vulnerability continuum, as well as children living in a wide range of social and economic conditions.	Atlas: *British Columbia Atlas of Child Development*. (2005). P. Kershaw, L Irwin, K, Trafford, C. Hertzman. Human Early Learning Partnership and Western Geographical Press. Ontario, Canada. Presentation: *Creating trajectories of early human development.* 2009. C. Hertzman, Council for Early Childhood Education. http://umanitoba.ca/faculties/medicine/units/mchp/media/Clyde_Hertzman_Early_Human_Development.pdf

Appendix 10. Use the EDI as a predictive measure of health or health-related outcomes (grey literature: Questions 5).

EDI as a predictive measure	Source
Canada: BC	
BC's population data core groups to work together to link the different data sources available, particularly in relation to health & healthcare databases and environmental/ occupational databases. The Pan-Canadian EDI is also introduced which combines provincial EDI maps and looks at the use of the EDI at a national level, including trajectories in relation to academic measures and outcomes.	Presentation: *Creating trajectories of early human development.* 2009. C. Hertzman, Council for Early Childhood Education (Weblink above). Presentation: *Where do we go from here?* 2009. C. Hertzman, Council for Early Childhood Education. http://www.councilecd.ca/files/PanCanadianEDI_Hertzman.pdf