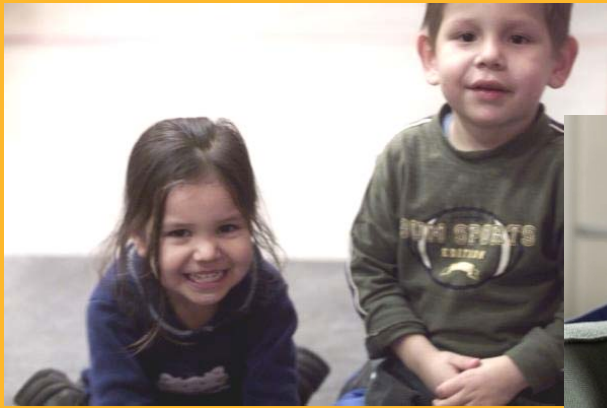


EDI in Manitoba

Promoting Best Outcomes for Manitoba's Children Through Evidence-Based Decision-Making

Part I: EDI and the Healthy Child Manitoba Strategy



Presented by Dr. Rob Santos, Healthy Child Manitoba Office, Healthy Child Committee of Cabinet, Government of Manitoba
The Early Development Imperative: A Pan-Canadian Conference on Population Level
Measurement of Children's Development – November 16, 2009 – Winnipeg, MB



Acknowledgements

- Teresa Mayer, HCMO
- Terra Johnston, HCMO
- Souradet Shaw, HCMO
- Manitoba Education
- Manitoba School Divisions (esp. K teachers)
- Offord Centre for Child Studies,
McMaster University
- Dr. Mariette Chartier, HCMO
- Manitoba Regional Health Authorities (esp. PHNs)

Presentation Overview

- Part I: Being Born in Manitoba: The Families First Postpartum Screening
- Part II: From the Early Years to Starting School: The Early Development Instrument (EDI)
- Part III: Implications for Action

What We (Need to) Feel:

- Outrage
- Urgency
- Responsibility

. . . and let these fuel our action in supporting families

(because our future is literally “in very small hands”
– *Charlie Coffey, 2008*)

PART I:



Being Born in Manitoba: The Families First Postpartum Screening

What is the Families First Screening?

- Healthy Child Manitoba Office (HCMO) partnership with Regional Health Authorities (RHAs) to screen all families with newborns for risk factors associated with poor child outcomes (est. 1999, revised 2003)
- Public Health Nurses (PHNs) collect information on 39 risk factors, including congenital anomalies, birth weight, multiple births, alcohol use and smoking during pregnancy, mother's age, education, marital status, mental health, and family social isolation
- Population-level data not available from other sources

What is the Families First Screening?

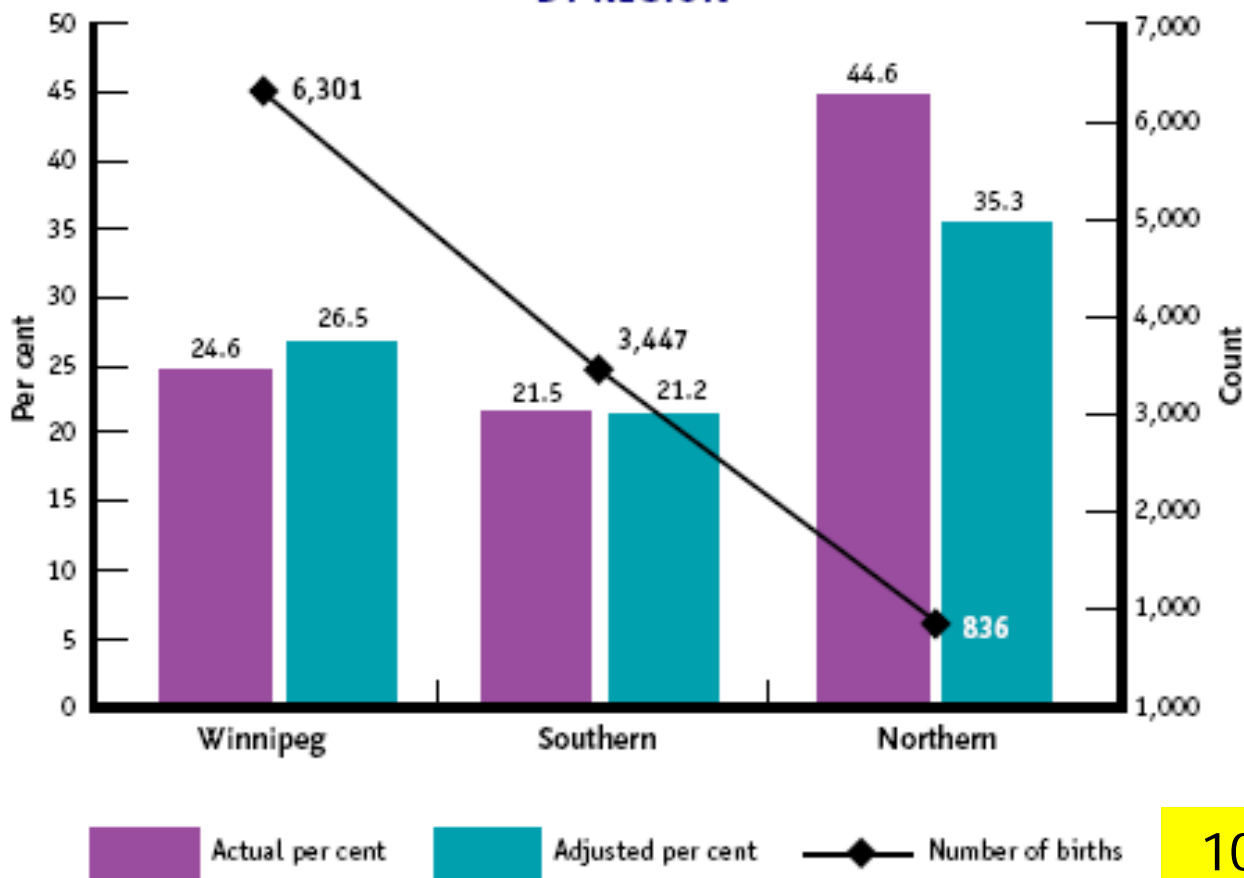
- Two-fold purpose: Public health intervention and population risk monitoring for policy development
- Recent evidence indicates good sensitivity (77%) and specificity (83%) in predicting later involvement with child welfare agencies (Brownell et al., 2007)
- On average, 11,700 Families First Screenings are completed each year (95% of all postpartum referrals and 83% of all births) in Manitoba
- The following data are for 2003-2006; group RHAs into Winnipeg, Southern, and Northern; and adjust for maternal age and education:

TABLE 1. PREVALENCE RATES OF RISK FACTORS IN MANITOBA FROM 2003 TO 2006

RISK FACTORS	2003	2004	2005	2006
Number of Births Screened	11,529	11,353	11,839	12,132
Three or More Risk Factors	23.4%	24.2%	24.8%	25.1%

1 in 4

FIGURE 1.
PREVALENCE RATES OF THREE OR MORE RISK FACTORS 2003-2006
BY REGION



10,584 babies

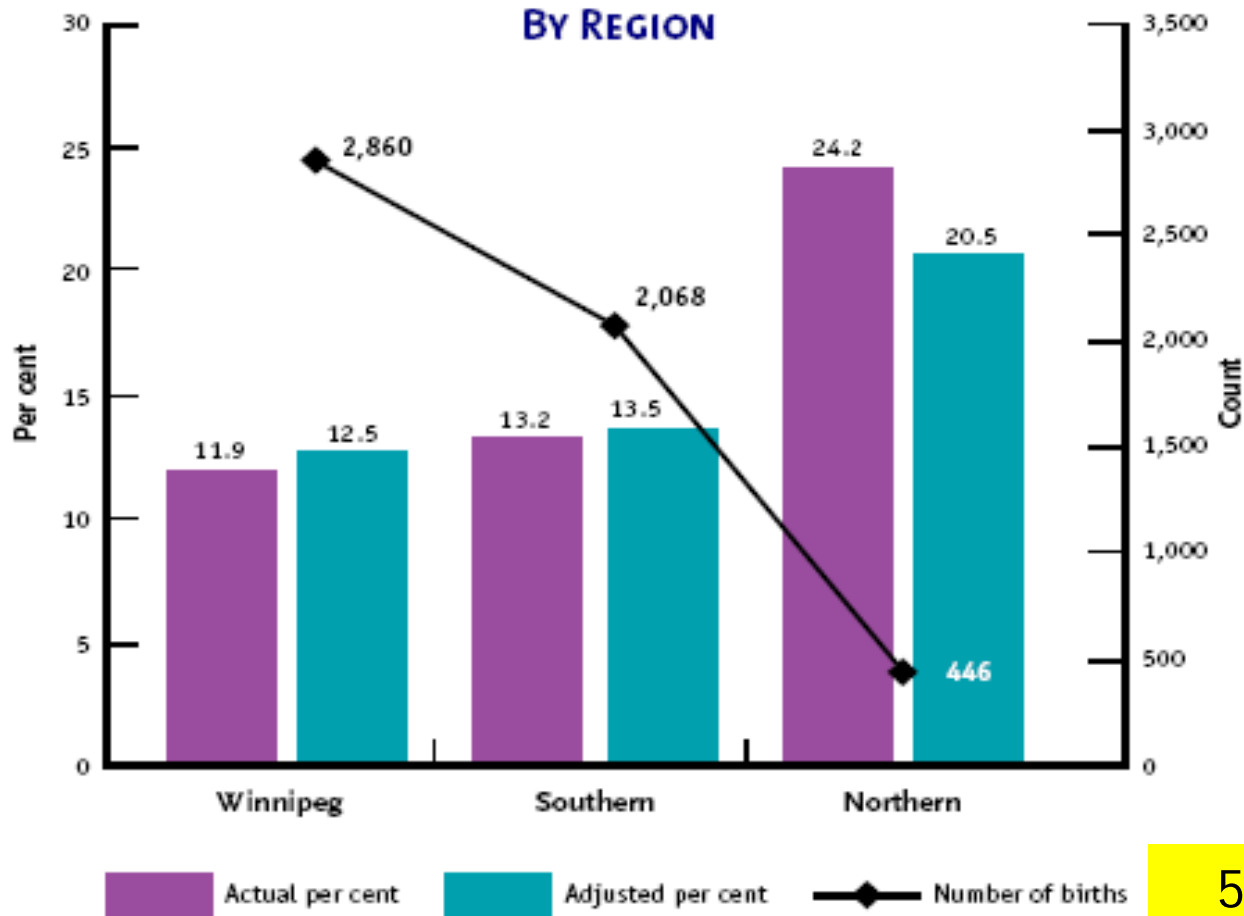
TABLE 1. PREVALENCE RATES OF RISK FACTORS IN MANITOBA FROM 2003 TO 2006

RISK FACTORS	2003	2004	2005	2006
Alcohol Use During Pregnancy	13.4%	12.3%	13.1%	12.8%
Smoking During Pregnancy	20.9%	20.8%	21.2%	21.0%

1 in 8

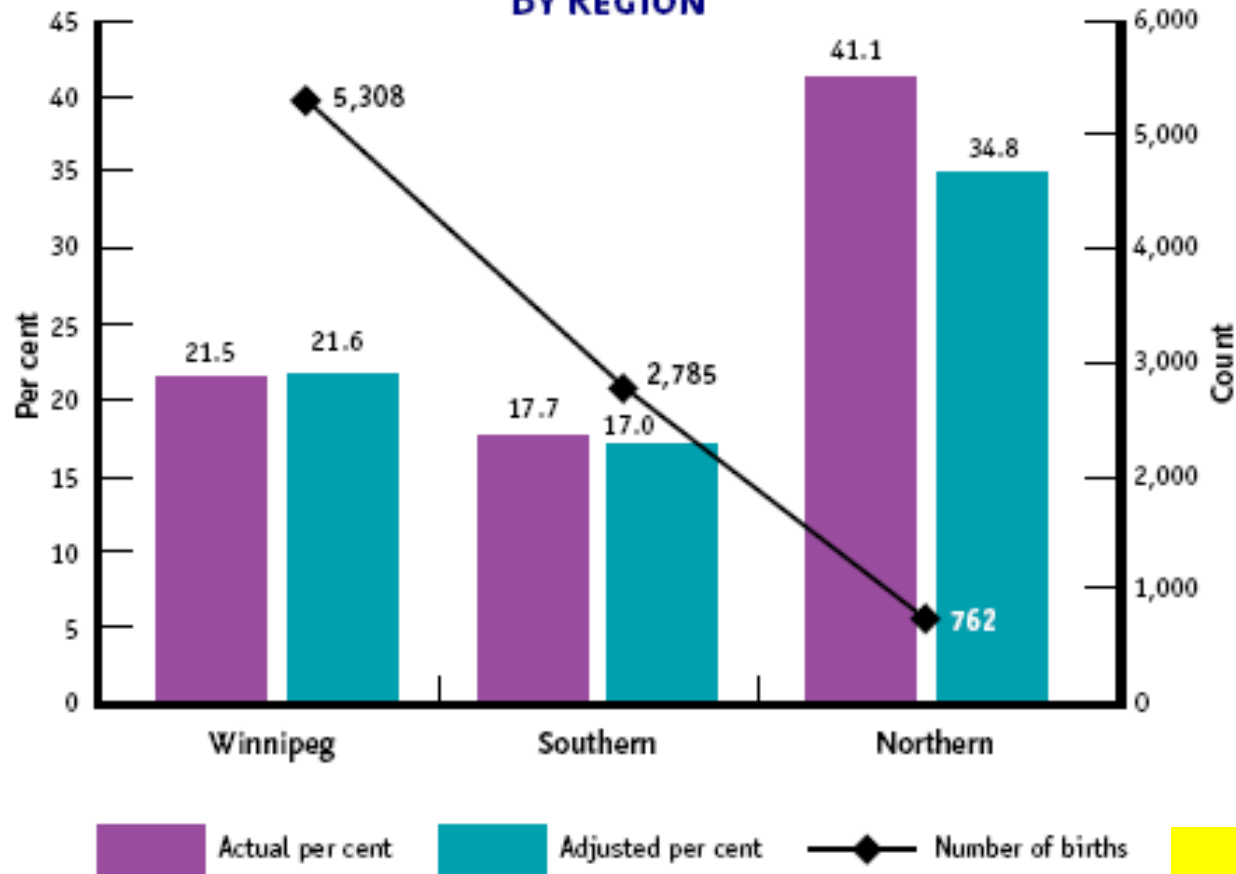
1 in 5

FIGURE 2.
PREVALENCE RATES OF ALCOHOL USE DURING PREGNANCY 2003-2006
BY REGION



5,374 babies

FIGURE 3.
PREVALENCE RATES OF SMOKING DURING PREGNANCY 2003-2006
BY REGION



8,855 babies

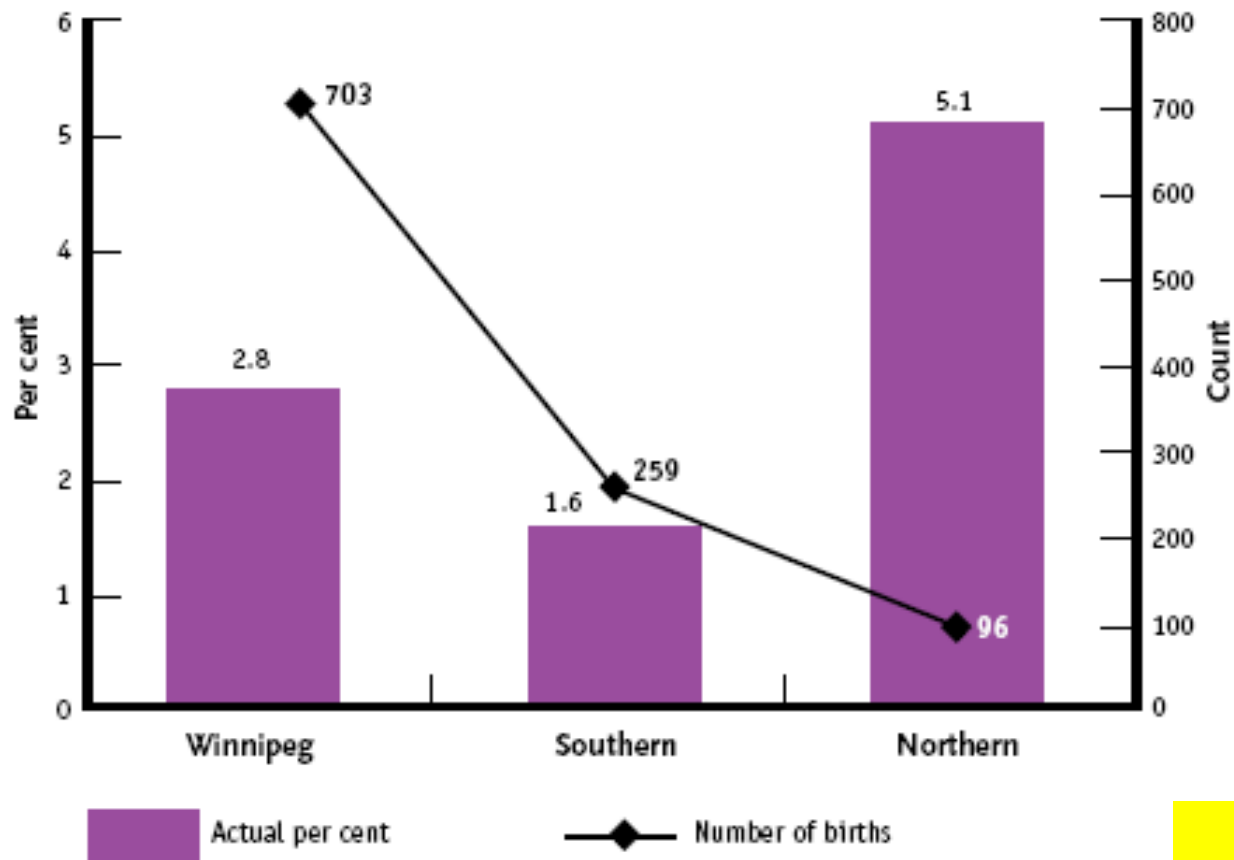
TABLE 1. PREVALENCE RATES OF RISK FACTORS IN MANITOBA FROM 2003 TO 2006

RISK FACTORS	2003	2004	2005	2006
Teenage Mother	2.5%	2.4%	2.6%	2.4%
Mother with Less than High School	21.9%	22.2%	21.1%	21.3%
Lack of Prenatal Care *	3.2%	3.0%	2.6%	2.8%

1 in 5

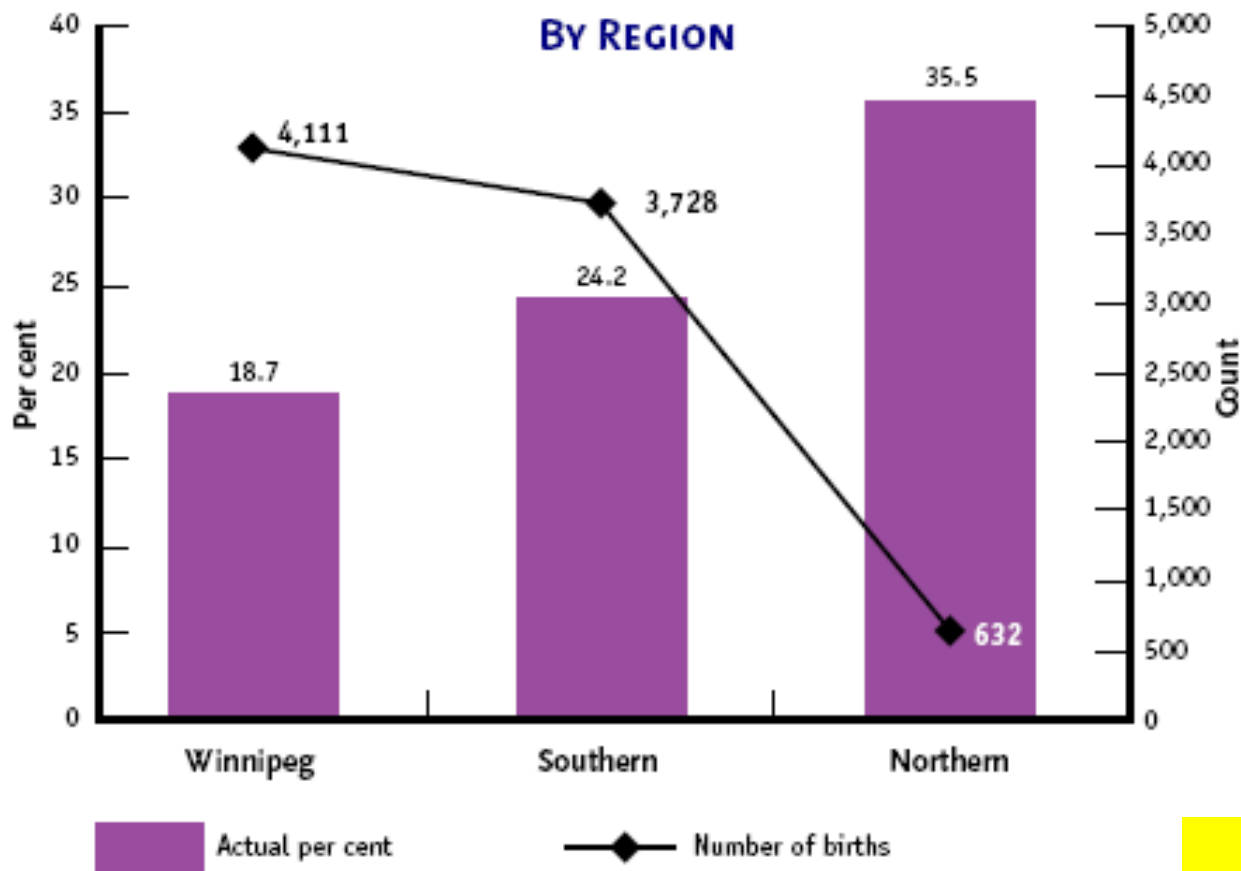
* Indicates statistically significant time trend

**FIGURE 4.
PREVALENCE RATES OF TEENAGE MOTHERS 2003-2006
BY REGION**



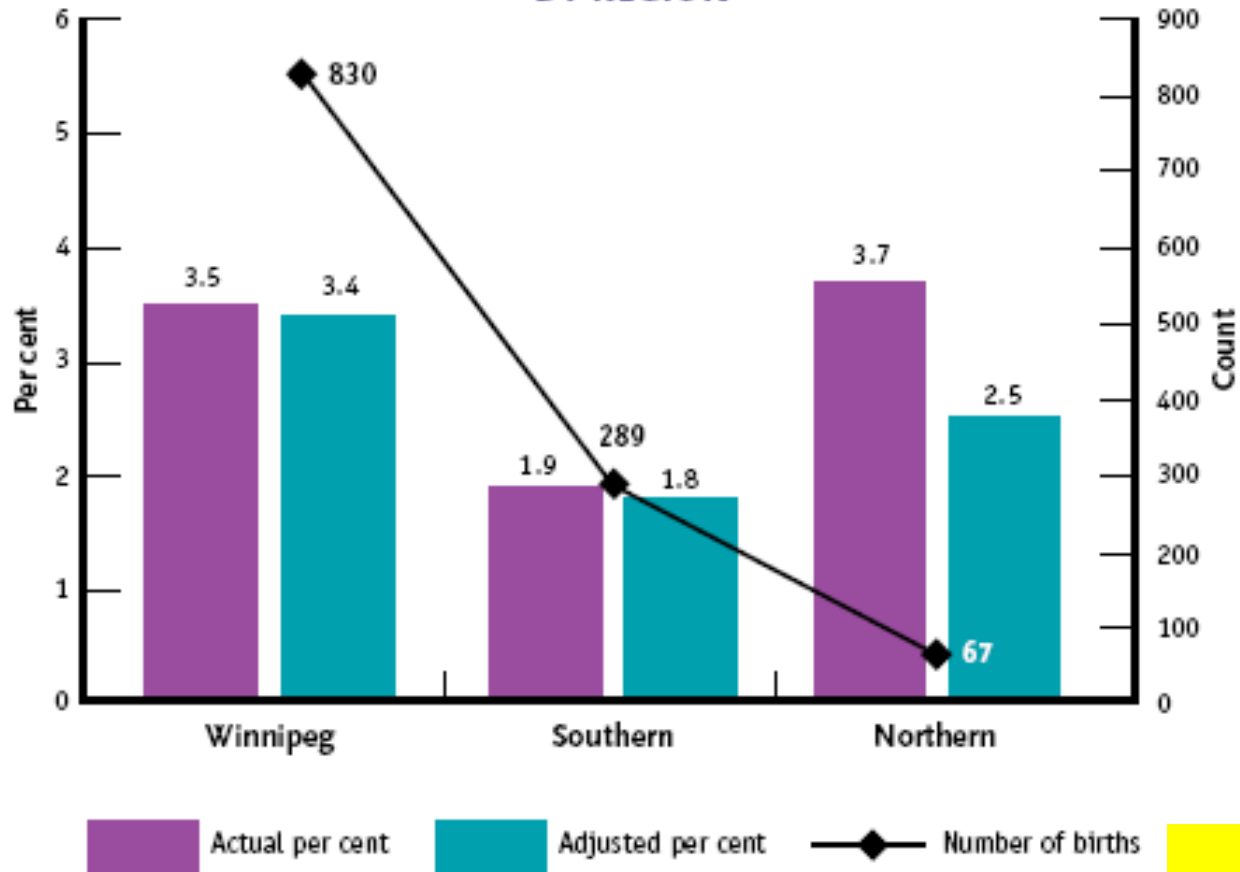
1,058 babies

FIGURE 5.
PREVALENCE RATES OF MOTHERS WHO DID NOT GRADUATE FROM
HIGH SCHOOL 2003-2006
BY REGION



8,471 babies

FIGURE 6.
PREVALENCE RATES OF LACK OF PRENATAL CARE 2003-2006
BY REGION



1,186 babies

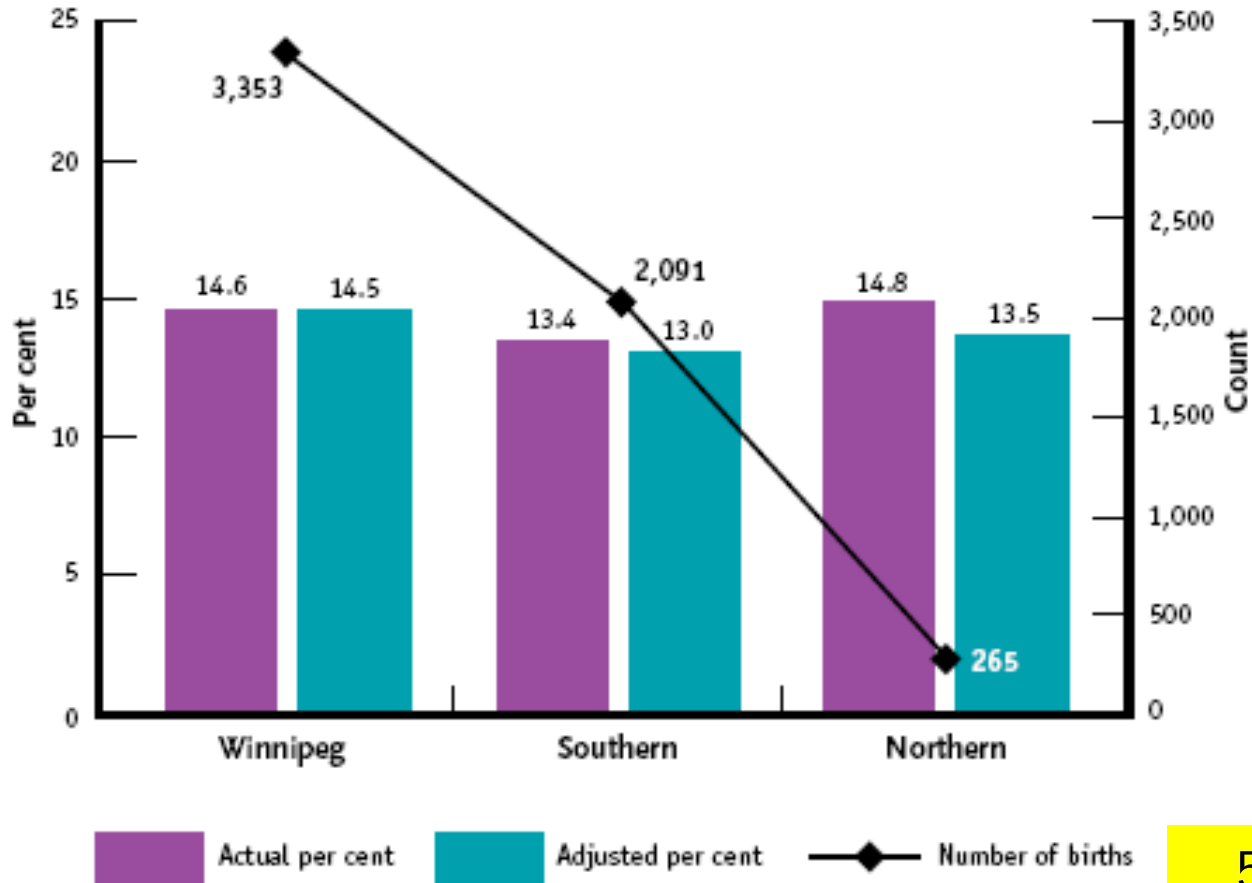
TABLE 1. PREVALENCE RATES OF RISK FACTORS IN MANITOBA FROM 2003 TO 2006

RISK FACTORS	2003	2004	2005	2006
Maternal Depression and Anxiety *	12.7%	14.0%	14.4%	15.2%
Family Social Isolation	4.8%	5.4%	5.2%	5.2%
Relationship Distress	5.9%	6.2%	5.9%	6.0%

1 in 7

* Indicates statistically significant time trend

**FIGURE 7.
PREVALENCE RATES OF MATERNAL DEPRESSION & ANXIETY 2003-2006
BY REGION**



5,709 babies

FIGURE 8.
PREVALENCE RATES OF MATERNAL SOCIAL ISOLATION 2003-2006
BY REGION

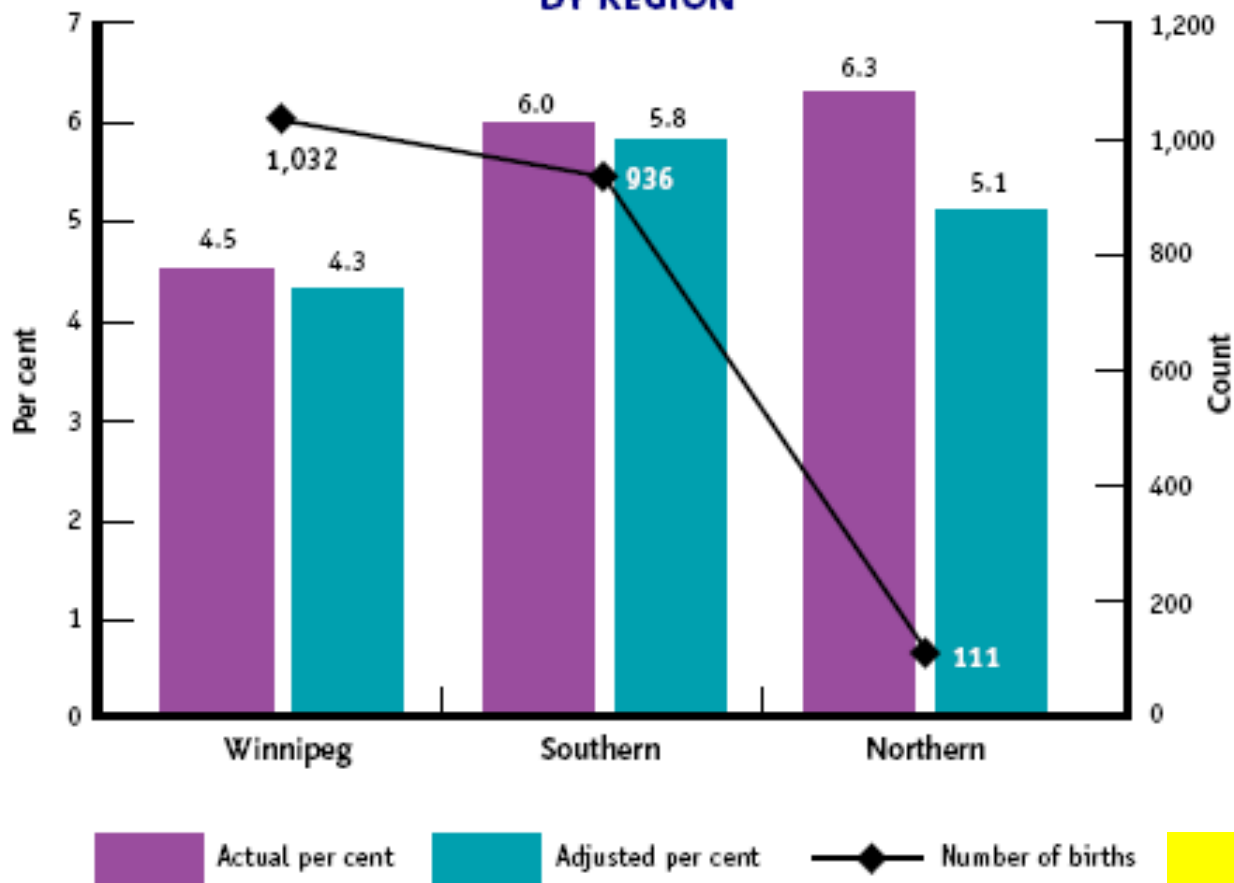
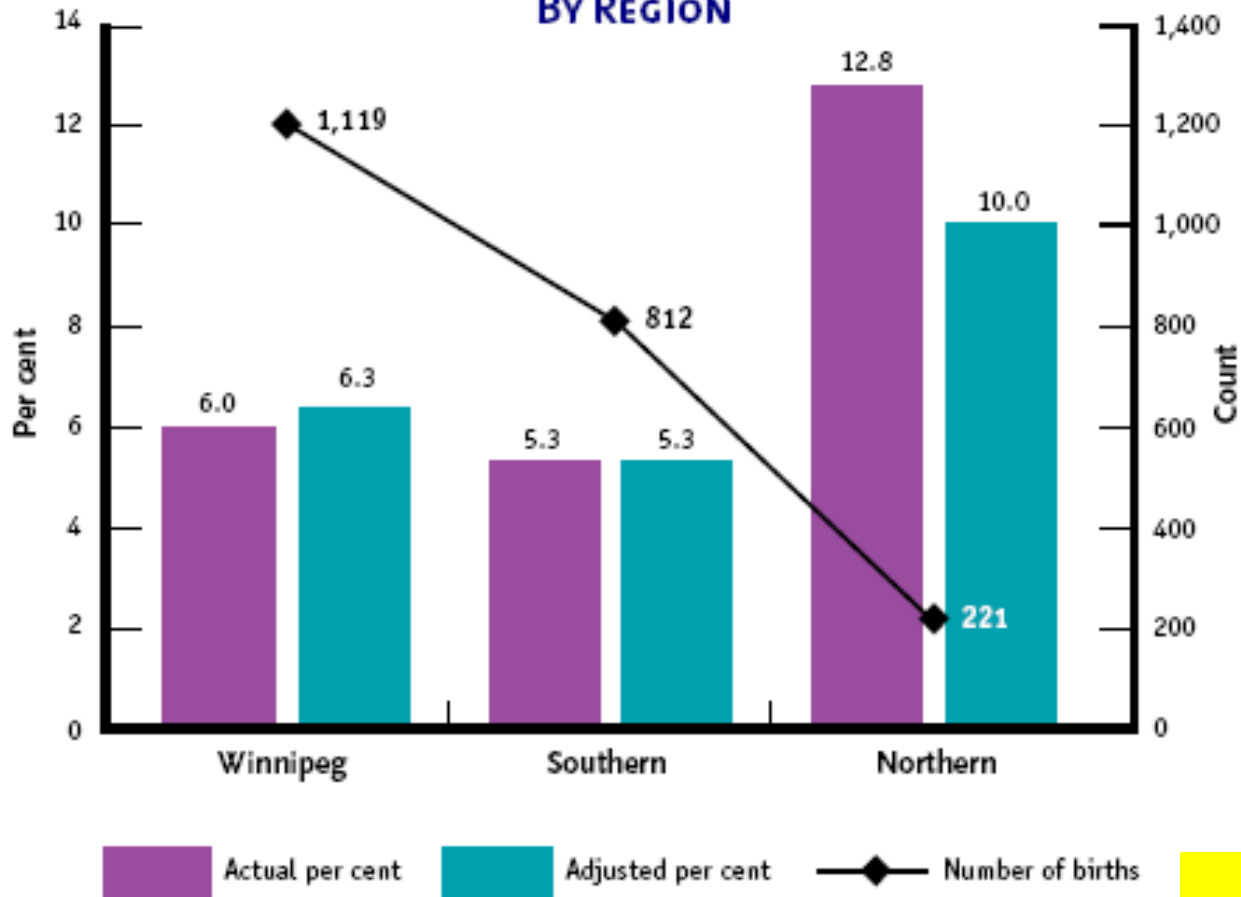


FIGURE 9.
PREVALENCE RATES OF RELATIONSHIP DISTRESS 2003-2006
BY REGION



2,152 babies

Families First Screening: Policy Implications

- Large proportion (1 in 4) of vulnerable children (≥ 3 risk factors) born every year in Manitoba (about 3000 newborns/year) – increasing population reach is essential
- Stability of risk factors from 2003-2006 provides a provincial baseline for measuring our future progress
- Pressing priorities:
 - reducing smoking and alcohol use during pregnancy
 - improving parental mental health
 - reducing maternal isolation and relationship distress
 - helping young women graduate from high school and delay first childbirth until adulthood (cf. intergenerational transmission)

PART II:



From the Early Years to Starting School: The Early Development Instrument (EDI)

The Early Development Imperative: A Pan-Canadian Conference on Population Level
Measurement of Children's Development – November 16, 2009 – Winnipeg, MB

 Healthy Child Manitoba
Putting children and families first

Manitoba 

The Early Development Instrument (EDI)

- A population-based, community-level measure of early childhood development (ECD) and school readiness
- Kindergarten teachers from Manitoba's School Divisions complete the EDI on all Kindergarten-aged children (about 20 min per child)

What does the EDI measure?

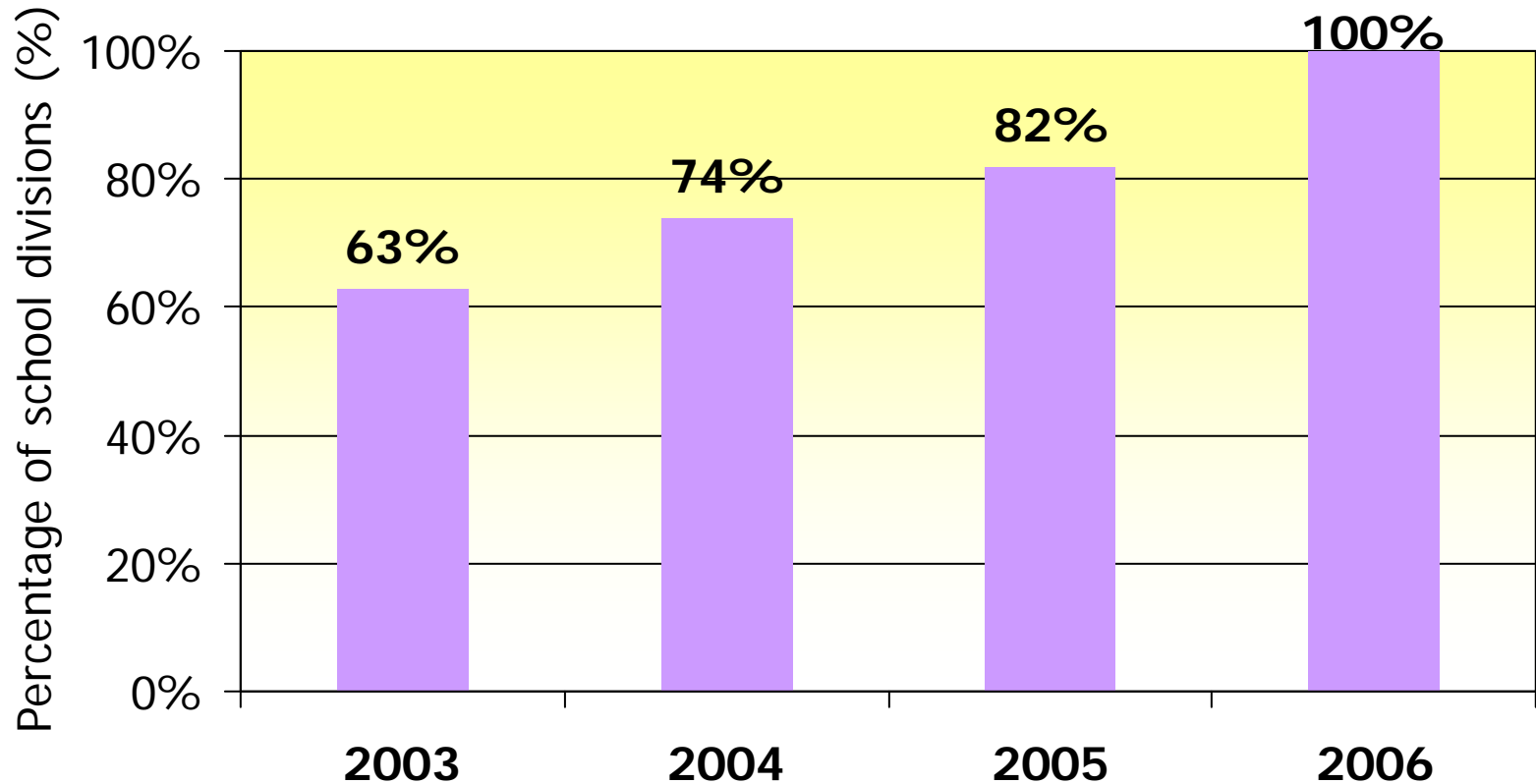
- Children's "readiness for school" across 5 different areas of child development:
 - Physical Health and Well-Being
 - Social Competence
 - Emotional Maturity
 - Language and Cognitive Development
 - Communication Skills and General Knowledge



History of the EDI in Manitoba (1998–present)

- **1998:** presentations by Dr. Fraser Mustard and Dr. Dan Offord
- **1999:** Understanding the Early Years (UEY) in Winnipeg School Division
- **2000:** UEY in South Eastman region
- **September 2001:** HCCC decision for province-wide, voluntary phase-in of EDI in Manitoba, funded and coordinated by the Healthy Child Manitoba Office (HCMO), Government of Manitoba
- **May 2002:** Dr. Dan Offord formally launches EDI in Manitoba
- **October 2002:** Dr. Magdalena Janus trains first school divisions in EDI
- **February 2003:** First school divisions implement the EDI in Manitoba

Implementation of the EDI in Manitoba: Percentage of School Divisions, 2003-2006



Using the EDI in Manitoba

1. Measuring progress in ECD
2. Understanding progress and identifying priorities in ECD
3. Influencing communities
4. Influencing public policy
5. Evaluating population-level effects of ECD investments

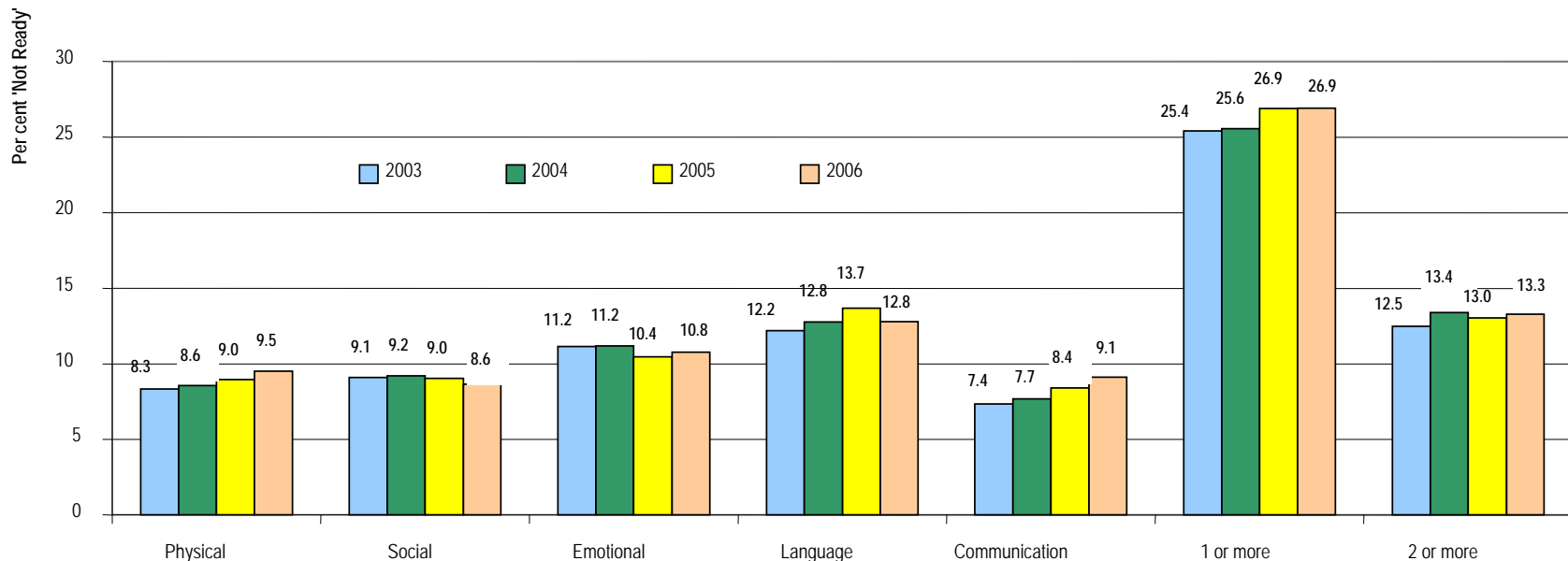
1. Measuring Progress in ECD

Measuring Progress in ECD

- First fully province-wide EDI collection in MB in February 2006 ($n = 12,500$)
- Note: through HCMO partnership with Manitoba First Nations Educational Resource Centre (MFNERC), Manitoba Education, and Indian and Northern Affairs Canada (INAC), the EDI will soon be collected in schools on reserve, adding to those partnering with Frontier School Division
- Beginning February 2007, EDI collected province-wide every 2 years (can compare change within same school divisions over time) – 2008/09 EDI data just arrived (coming soon!) – provincial trend over 3 data points
- Beginning February 2009, data on immigrant/newcomer status collected in Manitoba EDI
- BC-MB-ON collaboration to develop common method for measuring trends in EDI over time (new EDI Handbook now available)
- Manitoba Centre for Health Policy (MCHP) EDI report (coming in 2010)

4-year Time Trends in EDI

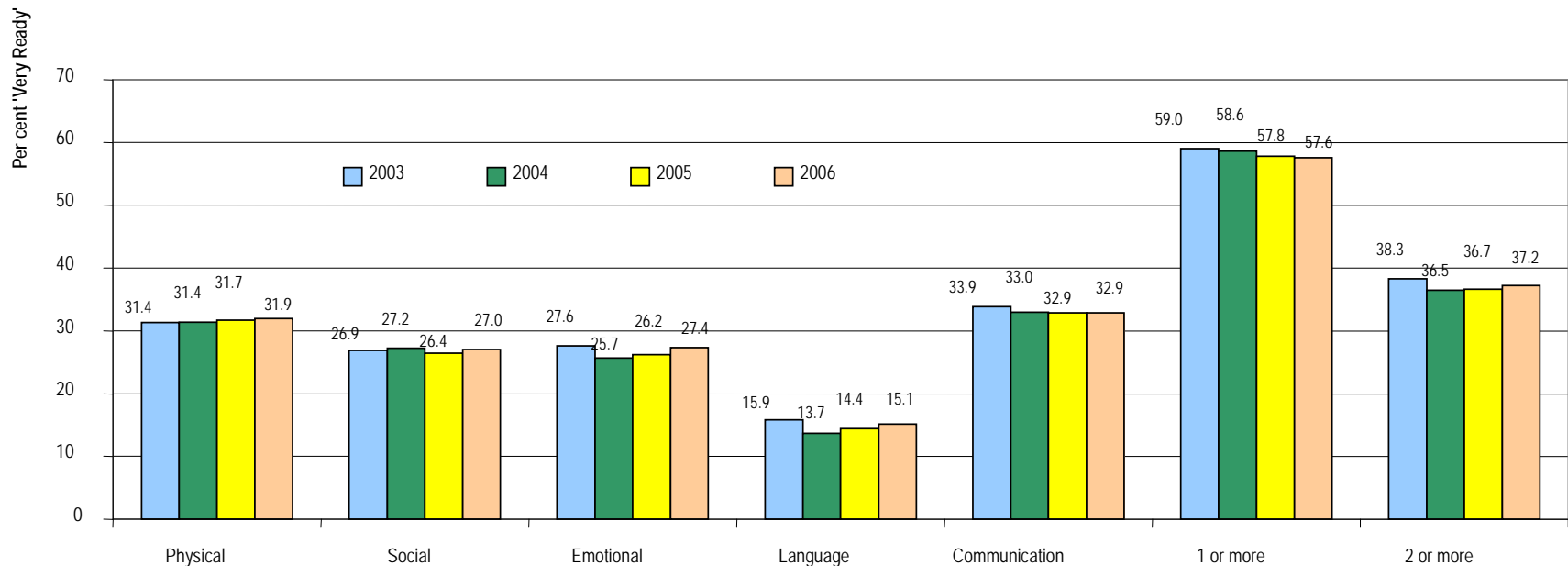
Percentage of children NOT READY, Manitoba, 2003-2006



NOTE: Results represent only those school divisions that participated in the EDI in 2003, 2004, 2005, and 2006 (about 60%)

4-year Time Trends in EDI

Percentage of children VERY READY, Manitoba, 2003-2006



NOTE: Results represent only those school divisions that participated in the EDI in 2003, 2004, 2005, and 2006 (about 60%)

2. Understanding Progress and Identifying Priorities in ECD

Understanding Progress and Identifying Priorities in ECD

- Aboriginal status, gender, SES and EDI
- LBW and EDI
- EDI and EDI Parent Survey
 - **EDI Parent Survey**
 - Two random population sample surveys of 1000 parents (in 2004 and 2006) linked to EDI results
 - partners: Human Resources and Social Development Canada, Social Research and Demonstration Corporation, and POLLARA
- Predictive validity of the EDI

How Many Manitoba Children Were Not Ready* to Start School in 2006?

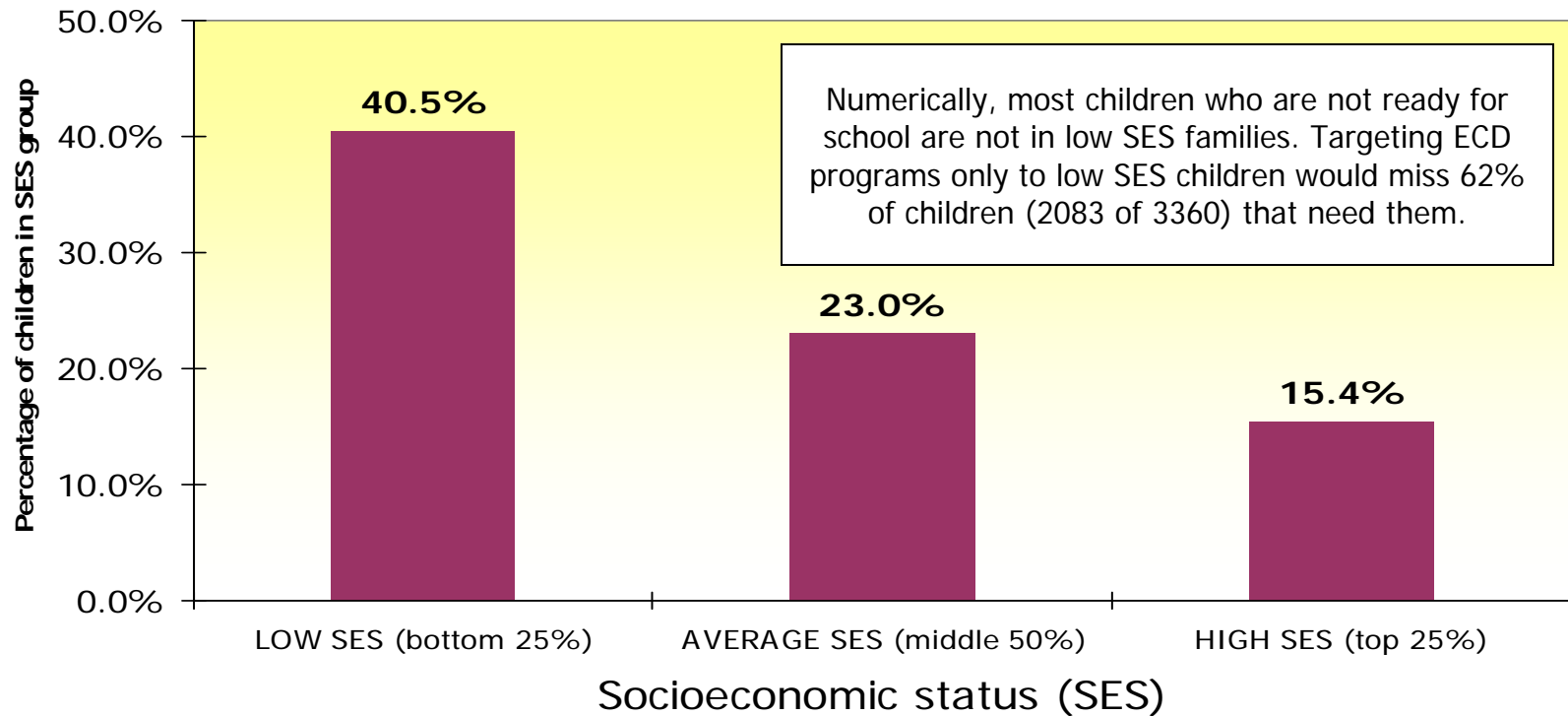
About 1 in 4 of all children (28%)

About 1 in 4 of non-Aboriginal children (24%)
and nearly 2 in 4 Aboriginal children (45%)

About 1 in 5 girls (19%) and 1 in 3 boys (32%)

** bottom 10% in one or more EDI domains*

SES and Children Not Ready to Learn in School – (age 5 years), Manitoba, 2006



Source: EDI Parent Survey 2006 and 2006 EDI results

NOTE: SES is a composite of household income and parental education. Low SES generally represents household income less than \$20,000 per year and parental education less than high school.

How Many Manitoba Children Were Very Ready* to Start School in 2006?

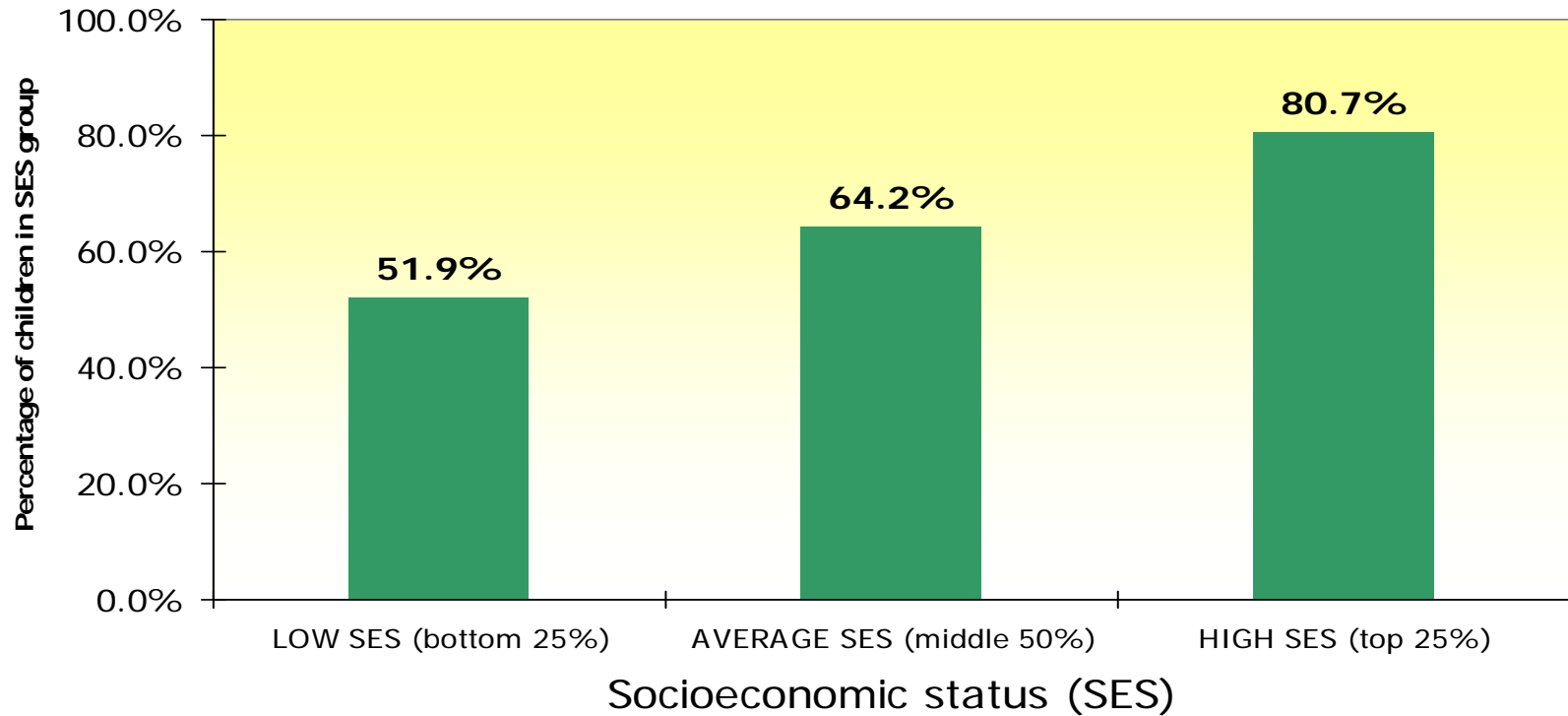
About 3 in 5 of all children (62%)

About 4 in 6 of non-Aboriginal children (66%)
and nearly 3 in 6 Aboriginal children (46%)

Over 2 in 3 girls (67%) and 1 in 2 boys (51%)

** top 30% in one or more EDI domains*

SES and Children Very Ready to Learn in School – (age 5 years), Manitoba, 2006

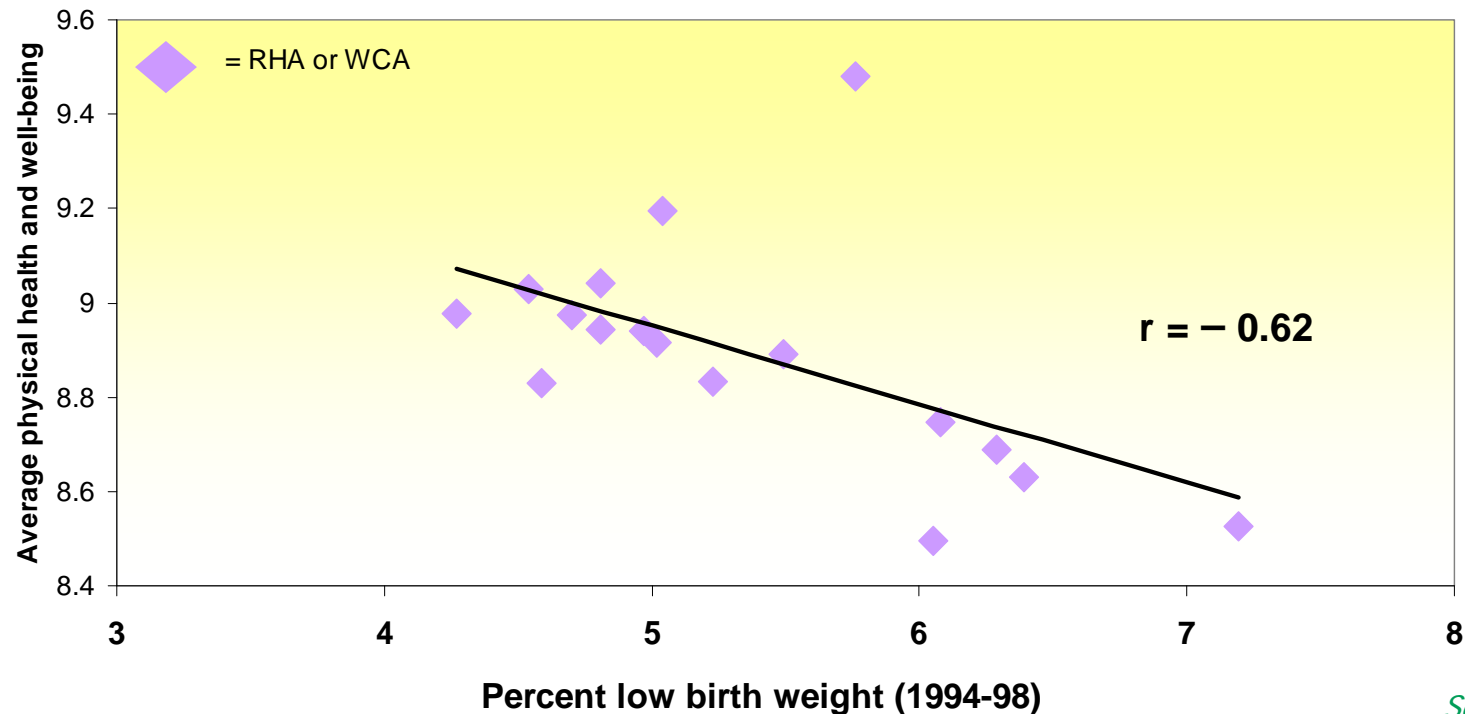


Source: EDI Parent Survey 2006 and 2006 EDI results

NOTE: SES is a composite of household income and parental education. Low SES generally represents household income less than \$20,000 per year and parental education less than high school.

Children's Readiness to Learn at School Entry Begins Before Birth: LBW 1998 and EDI 2003 in MB

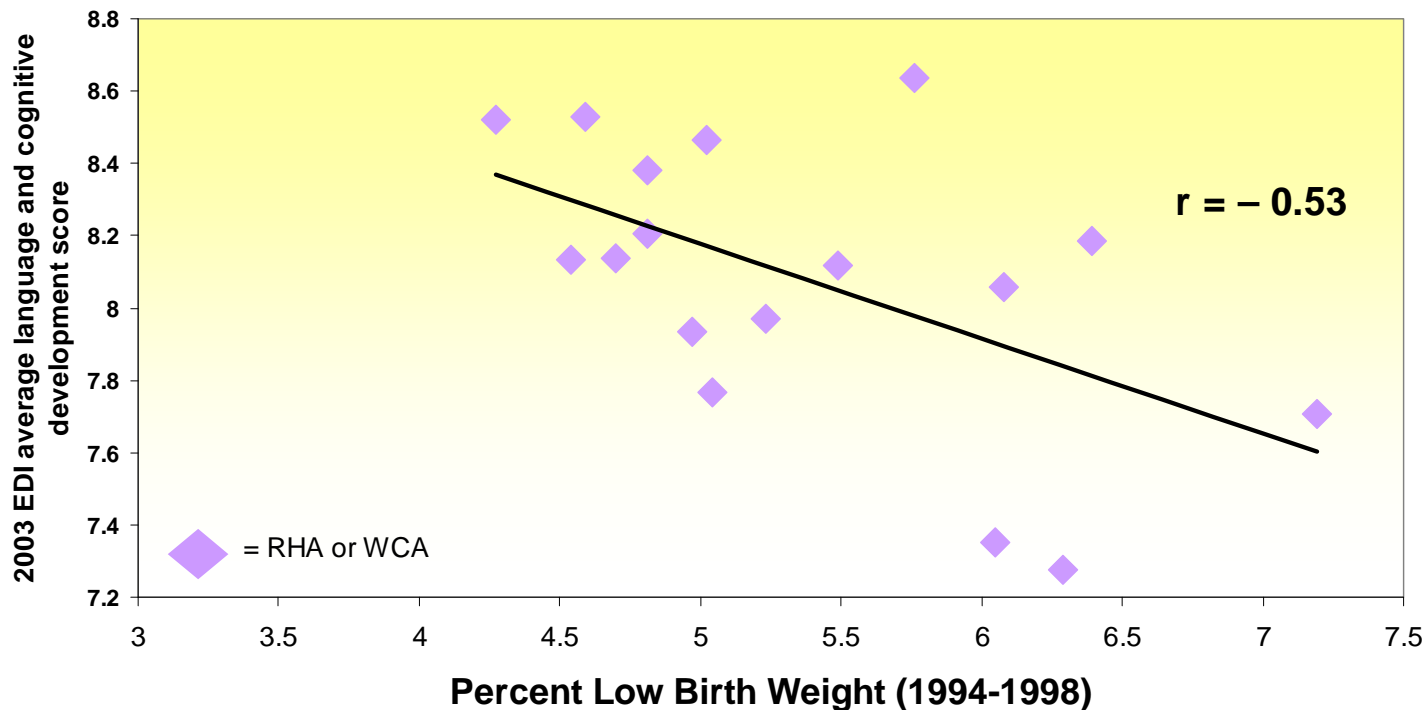
2003 EDI average physical health and well-being score vs. 1994-98 low birth weight



Source: HCMO (2003)

Children's Readiness to Learn at School Entry Begins Before Birth: LBW 1998 and EDI 2003 in MB

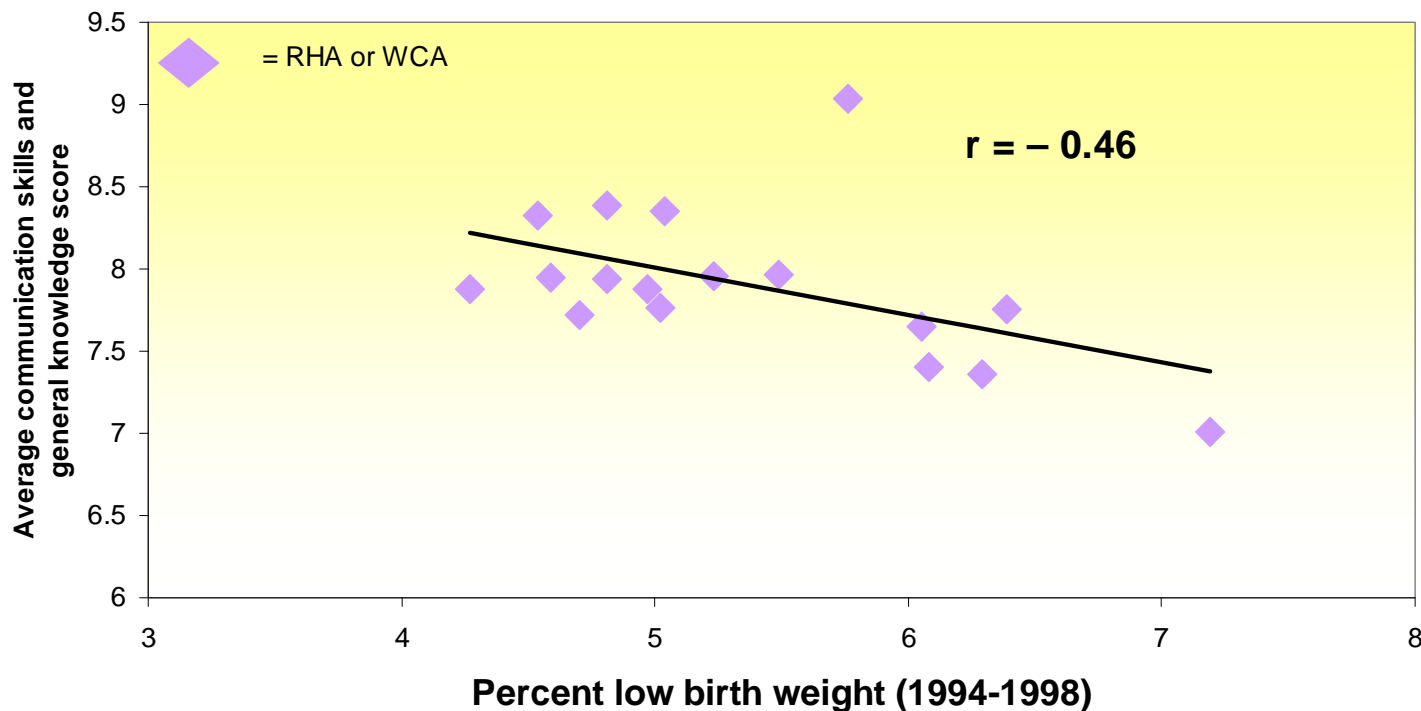
2003 EDI average language and cognitive development score vs.
1994-98 low birth weight



Source: HCMO (2003)

Children's Readiness to Learn at School Entry Begins Before Birth: LBW 1998 and EDI 2003 in MB

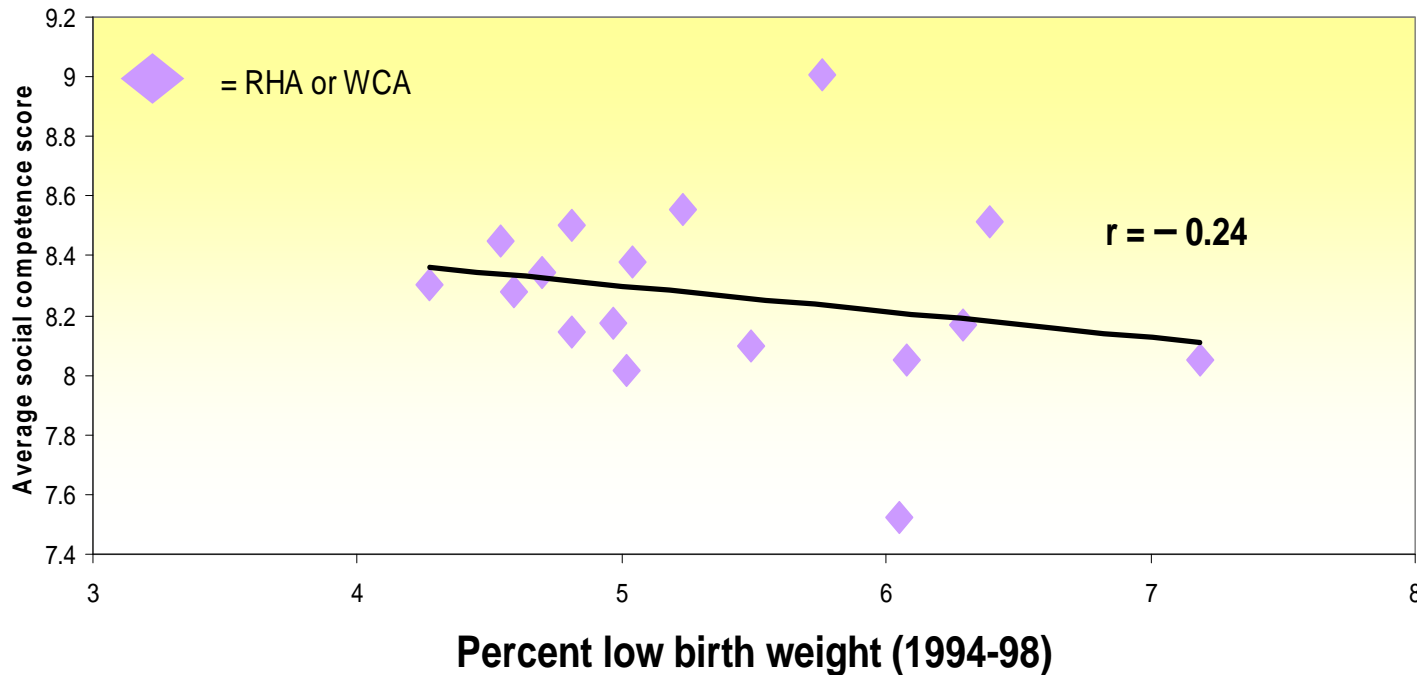
2003 EDI average communication skills and general knowledge score vs. 1994-98 low birth weight



Source: HCMO (2003)

Children's Readiness to Learn at School Entry Begins Before Birth: LBW 1998 and EDI 2003 in MB

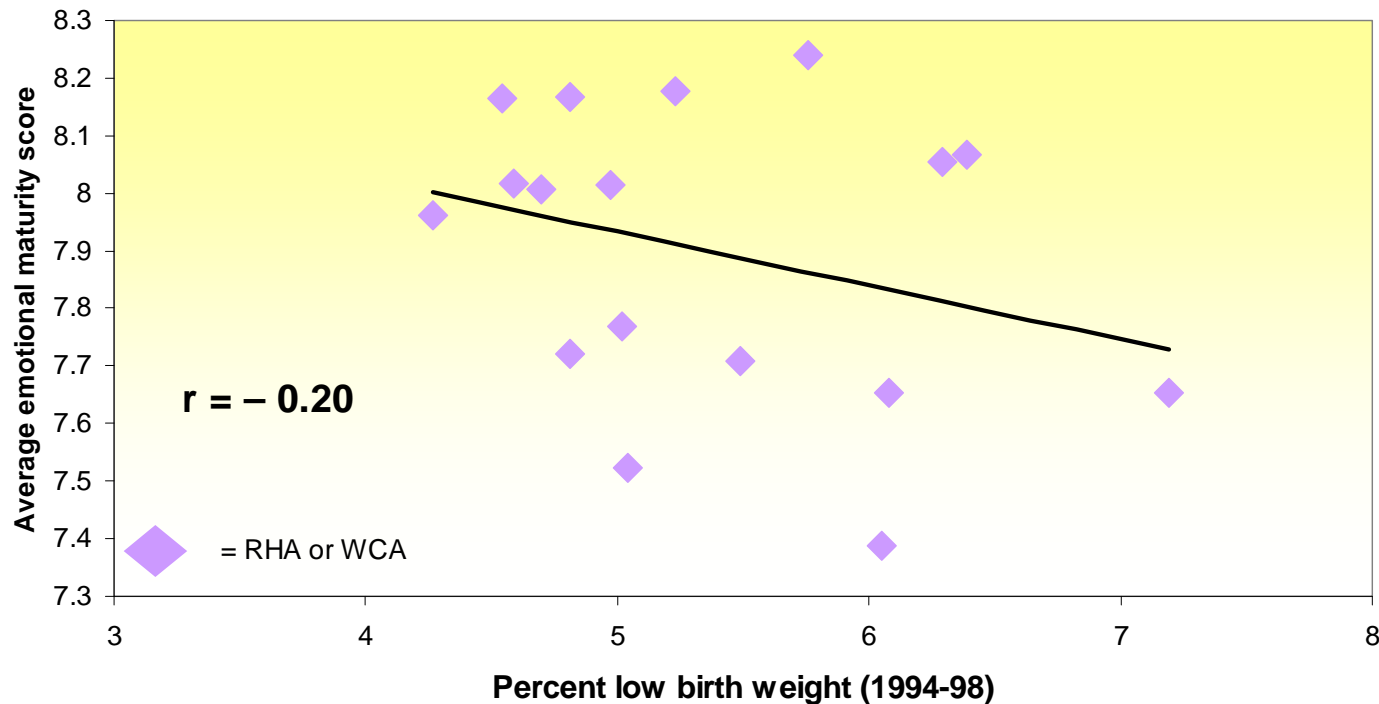
2003 EDI average social competence score vs.
1994-98 percent low birth weight



Source: HCMO (2003)

Children's Readiness to Learn at School Entry Begins Before Birth: LBW 1998 and EDI 2003 in MB

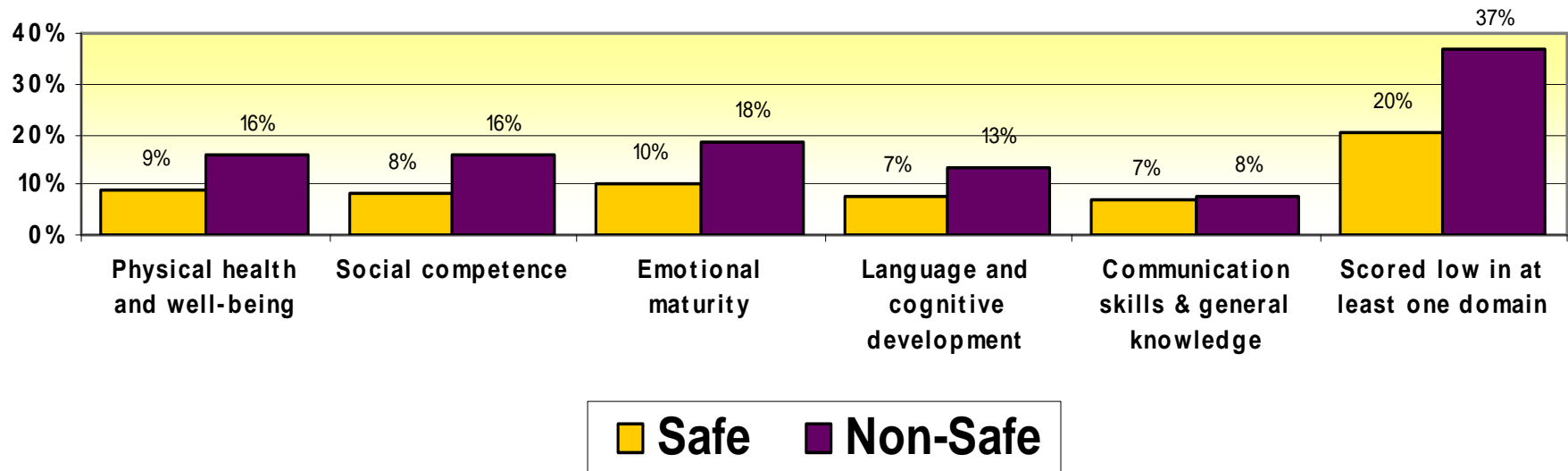
2003 EDI average emotional maturity score vs.
1994-98 percent low birth weight



Source: HCMO (2003)

COMMUNITY MATTERS:

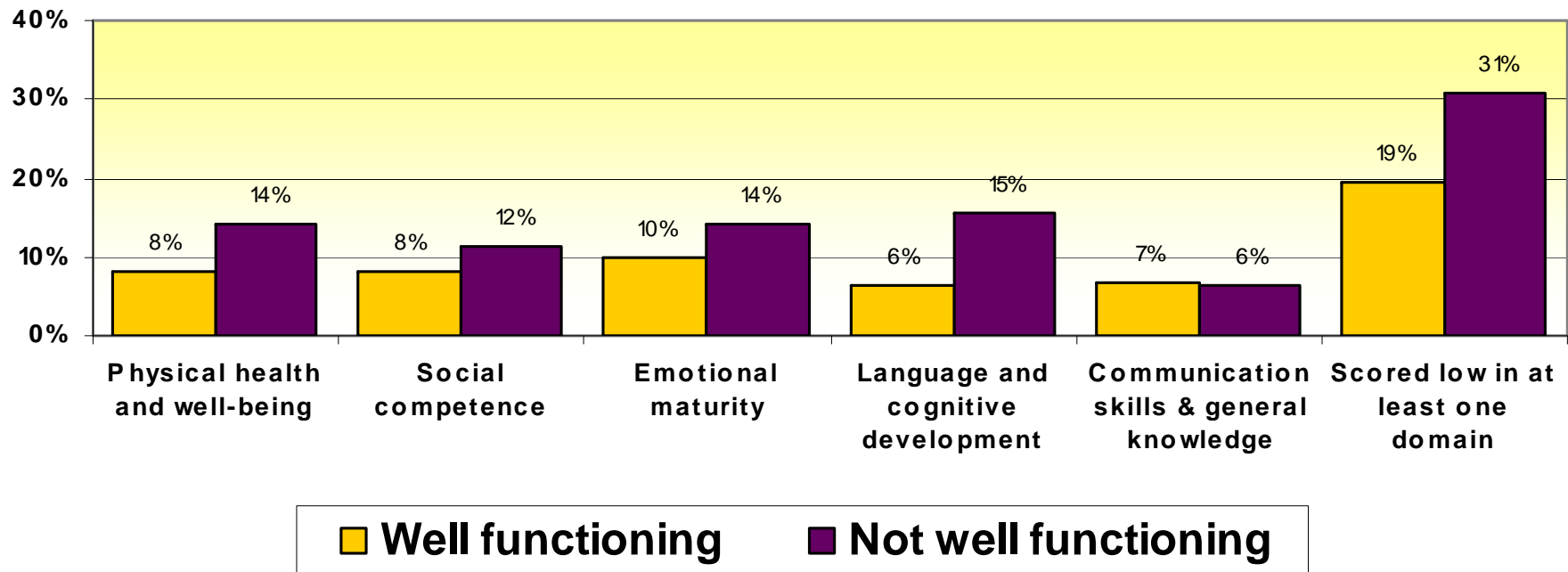
Neighbourhood Safety and Percentage of MB Children Not Ready to Learn in School, 2004



Source: 2004 EDI Parent Survey and 2004 EDI results

Note: Shorter bars are better

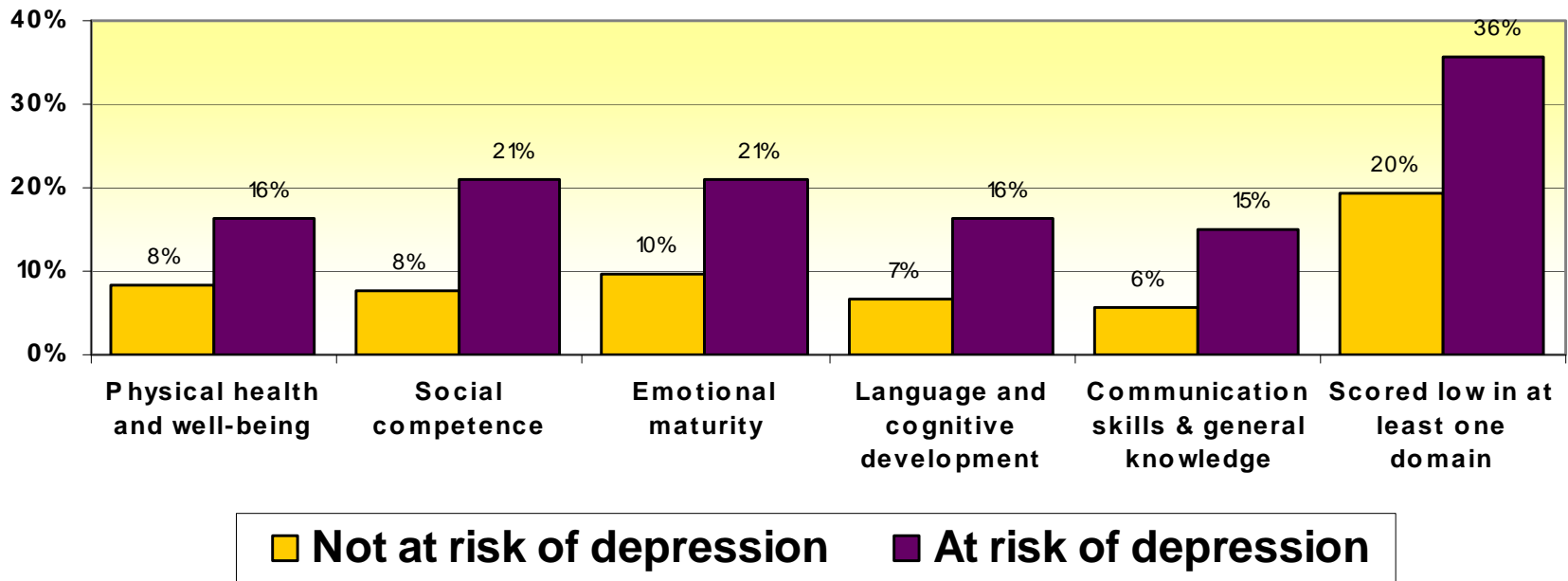
FAMILY WELL-BEING MATTERS: Family Functioning and Percentage of MB Children Not Ready to Learn in School, 2004



Source: 2004 EDI Parent Survey and 2004 EDI results

Note: Shorter bars are better

PARENT WELL-BEING MATTERS: Parental Depression and Percentage of MB Children Not Ready to Learn in School, 2004

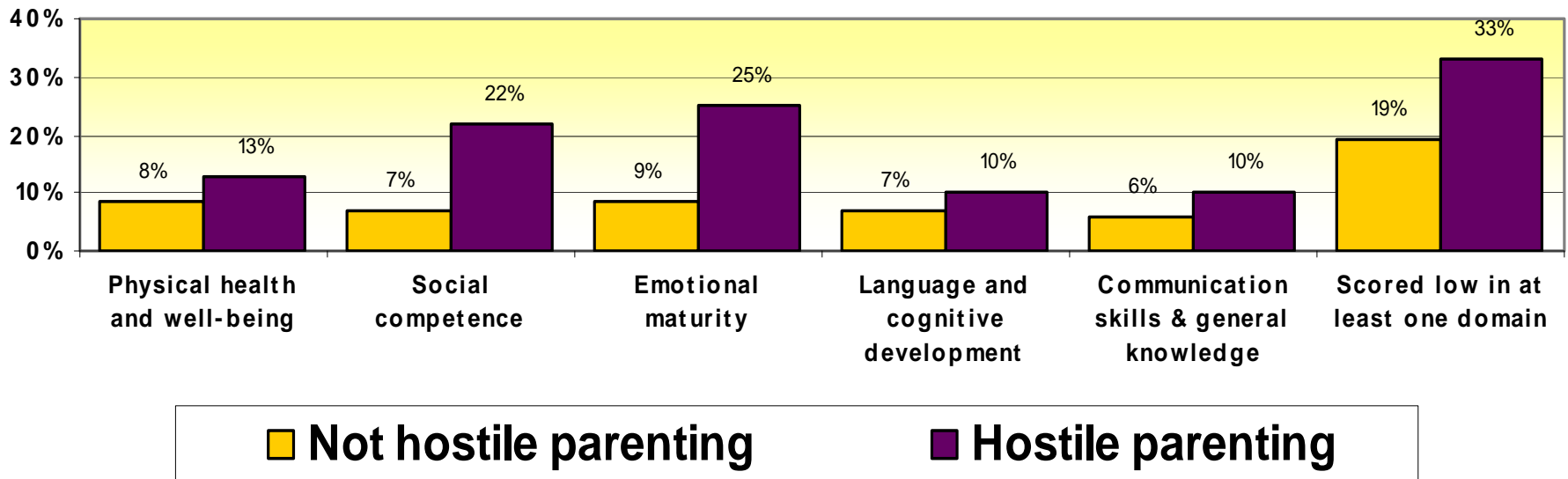


Source: 2004 EDI Parent Survey and 2004 EDI results

Note: Shorter bars are better

PARENTING MATTERS:

Hostile Parenting and Percentage of MB Children Not Ready to Learn in School, 2004

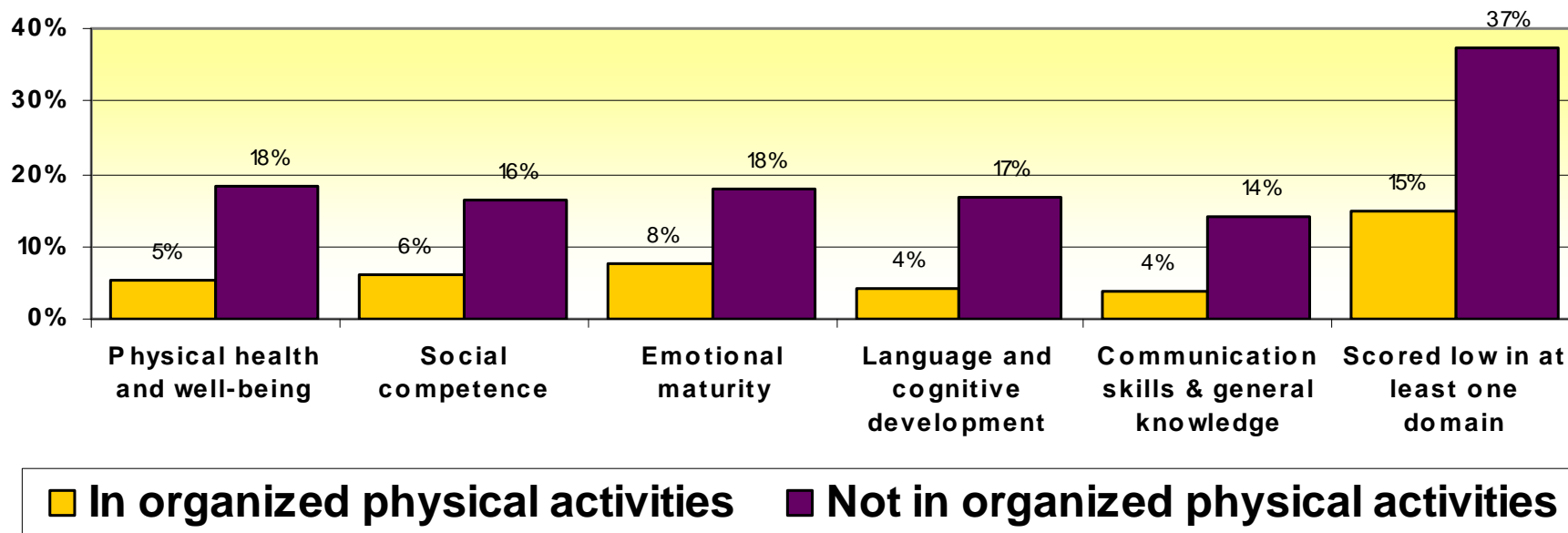


Source: 2004 EDI Parent Survey and 2004 EDI results

Note: Shorter bars are better

HEALTHY LIVING MATTERS:

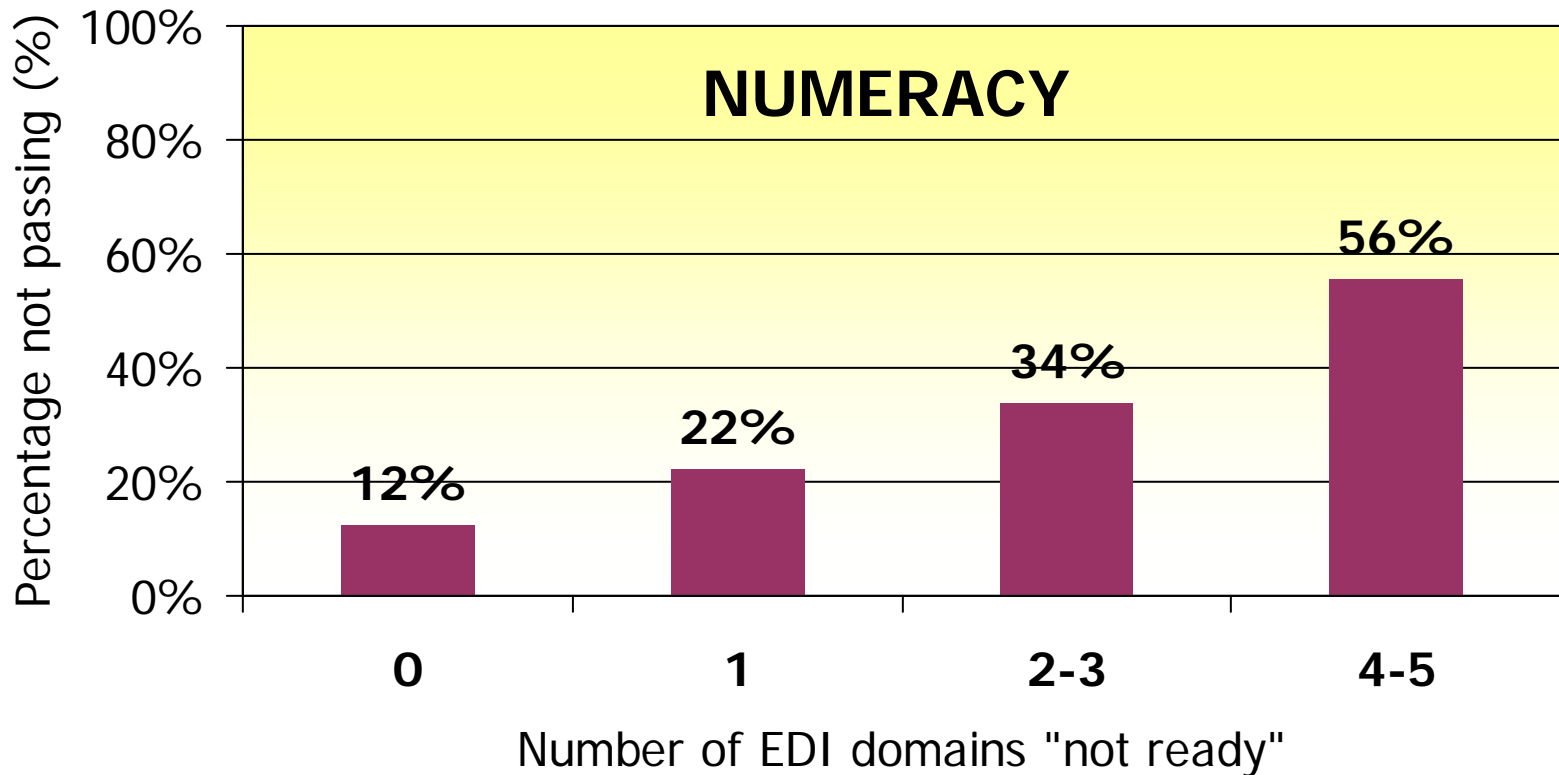
Participation in Organized Physical Activities and Percentage of MB Children Not Ready to Learn in School, 2004



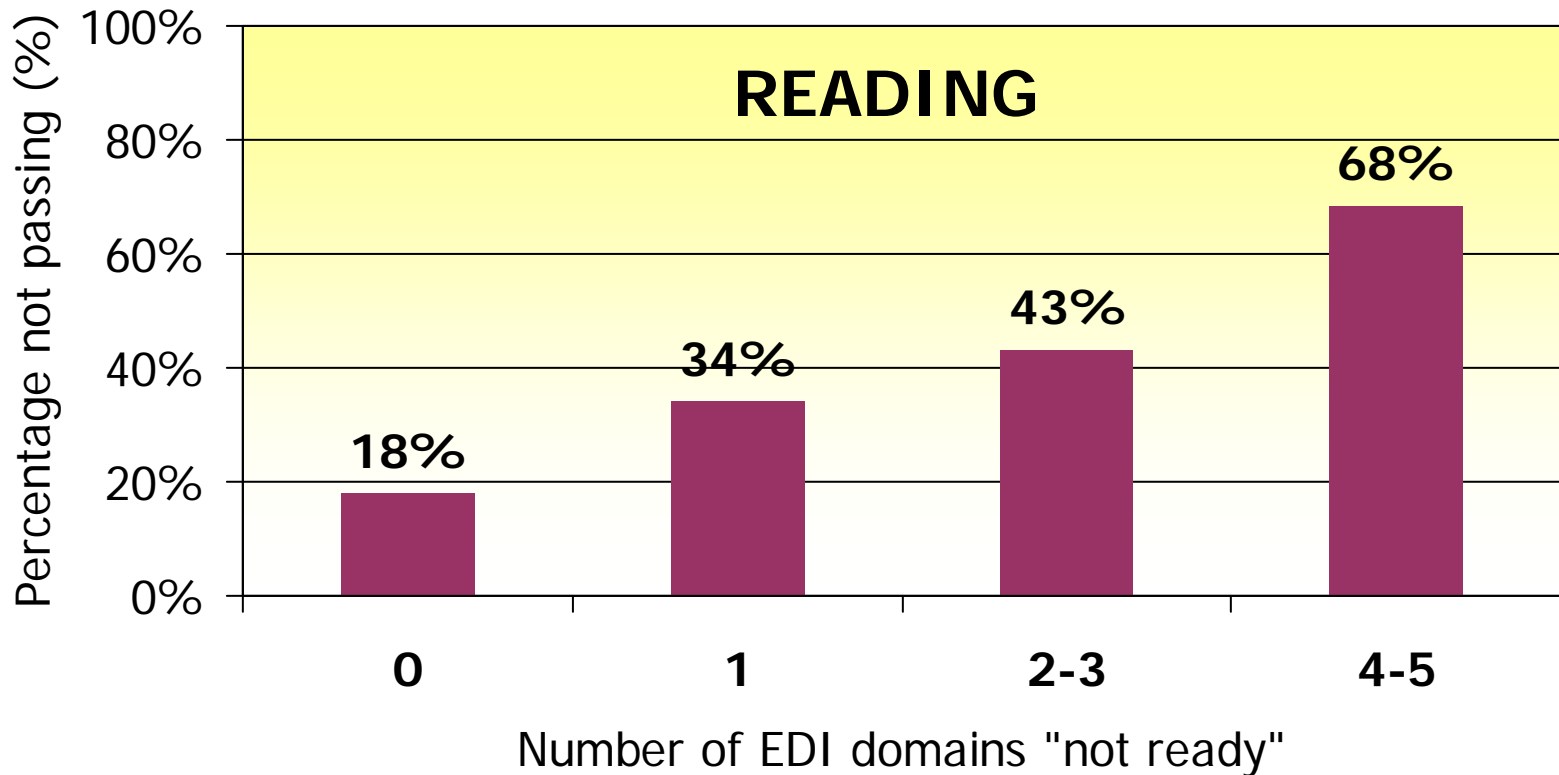
Source: 2004 EDI Parent Survey and 2004 EDI results

Note: Shorter bars are better

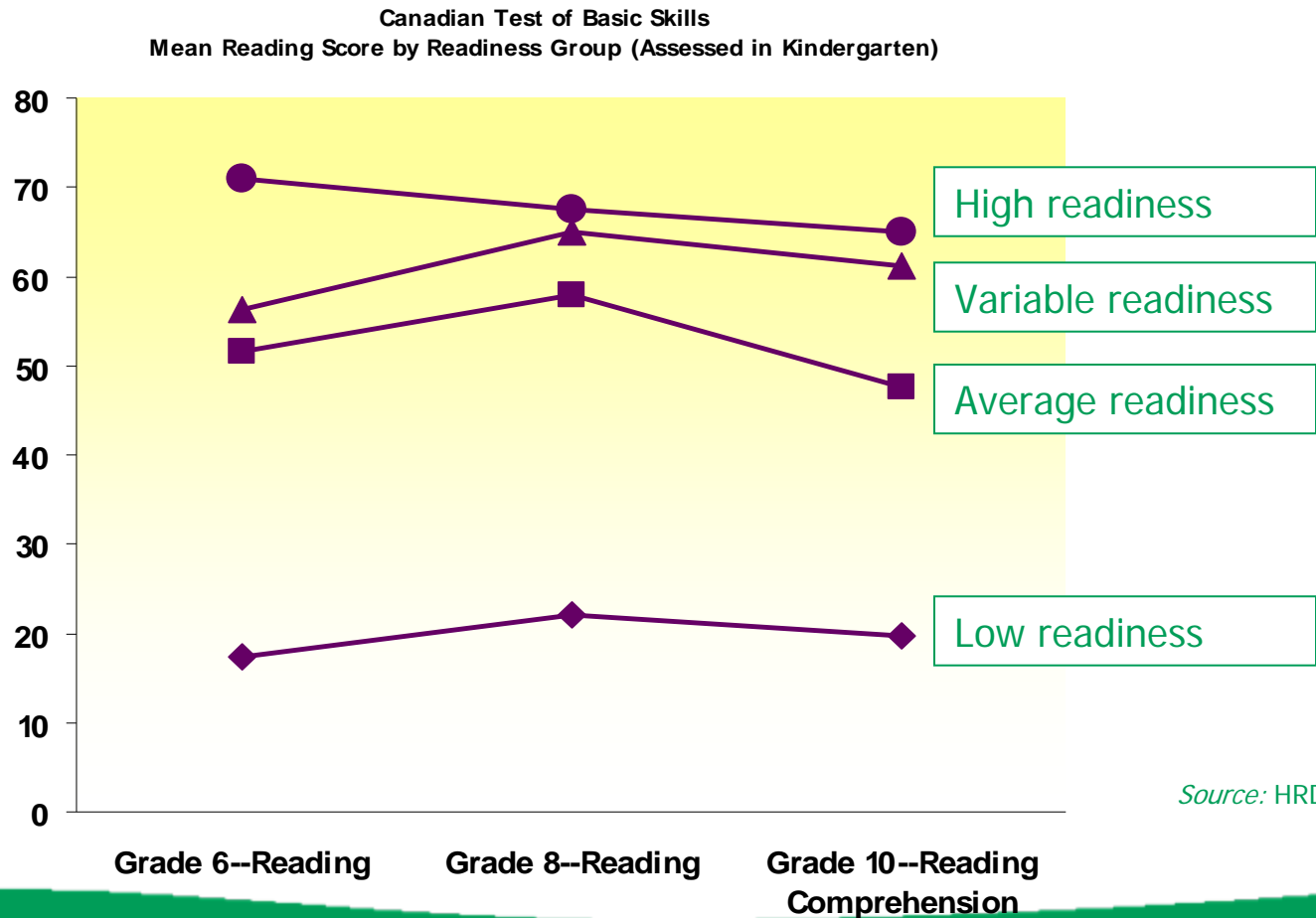
Predictive Validity of the EDI: "Not Ready" on the EDI (2000-2001) and Grade 4 Foundational Skills Assessments (FSAs) in British Columbia, 2004-2005



Predictive Validity of the EDI: "Not Ready" on the EDI (2000-2001) and Grade 4 Foundational Skills Assessments (FSAs) in British Columbia, 2004-2005



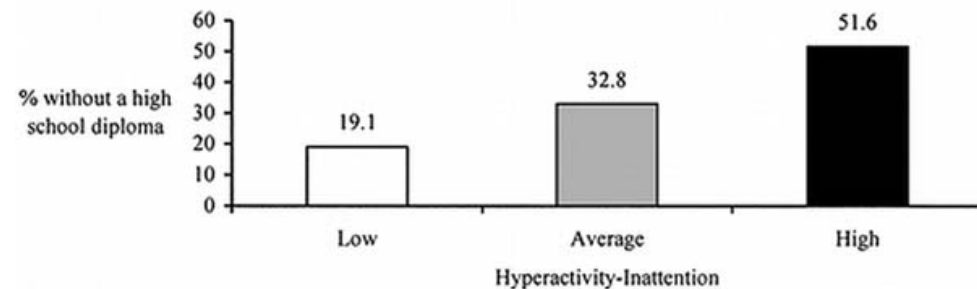
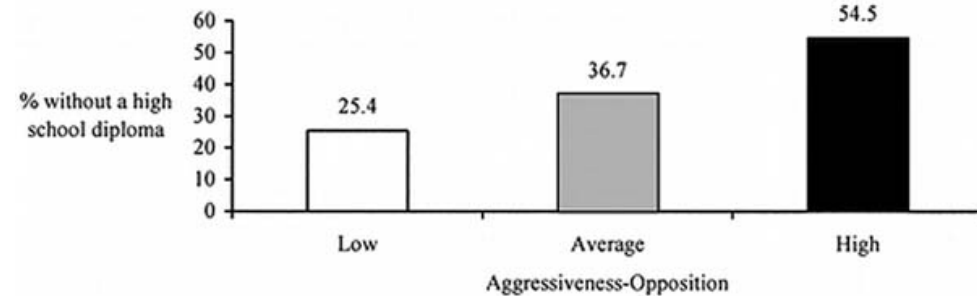
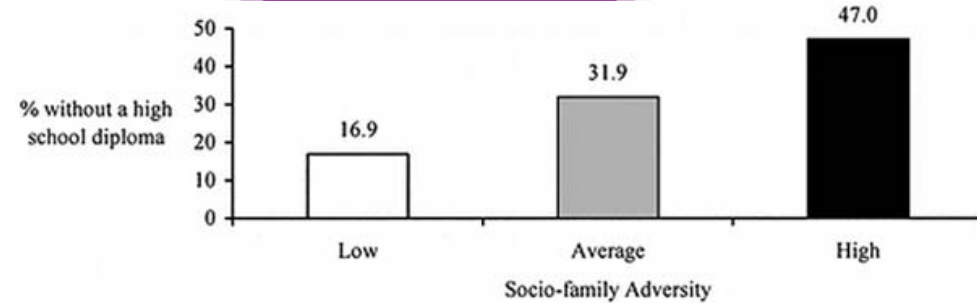
Early Differences in Readiness at School Entry Persist Through to Grade 10



Source: HRDC-ARB (2003).

Predicting High School Graduation in Kindergarten

- Children's aggression and attention/ hyperactivity problems in Kindergarten (using items similar to those in the EDI) are each associated with 2 to 2.5 times the risk of not completing high school
- This is similar to the magnitude of risk associated with family socioeconomic adversity



Vitaro et al. (2005)

Policy Implications

- 2006 is the first year that province-wide EDI results from all 37 school divisions were available for MB (note: the EDI is not yet being collected in schools on reserve, except the 8 First Nations partnering with Frontier School Division)
- Children represented in 2006 EDI results were born in 2000: These results reflect our investments in these children to date (prenatal to school entry)
- Significant proportions and numbers of Manitoba children continue to be vulnerable (“not ready”) when starting school
- 2006 EDI results should serve as a provincial baseline for measuring Manitoba’s progress for its children, into the future

Policy Implications

- Pressing policy priorities
 - language and cognitive development is consistently Manitoba's worst EDI outcome
 - need for more effective early literacy interventions (massive future economic implications)
- Vulnerable boys
 - especially in social competence (2.1x) and emotional maturity (2.2x), even after statistically controlling for child age and Aboriginal status
- Levelling the playing field: Reducing SES inequities
 - Statistically, two distinct groups of children: "not ready" (28%) and "very ready" (62%), with only 5% overlap, defined in large part by family SES
 - Similar for Aboriginal children: "not ready" (45%) and "very ready" (46%), with only 8% overlap, also largely defined by family SES
- Closing the gap for Aboriginal children
 - more likely to be not ready in physical (2.7x), social (2.1x), and language (1.9x), i.e., Aboriginal gap persists even after statistically controlling for child gender and family SES (but Aboriginal gap in "very ready" results disappears after controlling for gender and SES)
- Population reach: Success for all
 - most vulnerable children in Manitoba are neither low SES nor Aboriginal, e.g., only 30% of vulnerable children are Aboriginal (70% are non-Aboriginal)
 - significant change in future EDI results is unlikely without reaching all vulnerable children, e.g., across SES groups, through both universal and targeted programs

3. Influencing Communities

Influencing Communities

Parent-Child Coalitions and School Divisions are using EDI results to identify priorities, strengthen local partnerships, implement initiatives and influence government priorities. Continuing challenges include needs for additional data, analyses, and knowledge exchange.

- EDI and Manitoba
 - Provincial EDI report
 - annual province-wide EDI knowledge exchange forum
- EDI and Parent-Child Coalitions (PCCs)
 - EDI mapped reports for PCCs and PCC success stories
 - Parkland PCC has used EDI data to guide early language initiatives
- EDI and School Divisions (SDs)
 - EDI mapped reports for SDs and SD success stories
 - DSFM has used EDI data for pilot communities (CPEFs)

4. Influencing Public Policy

Influencing Public Policy

PUBLIC REPORTING:

- EDI and Federal/Provincial/Territorial collaboration
 - *Investing in Early Childhood Development: Progress Reports*
- EDI and Manitoba Conservation
 - *Provincial Sustainability Report for Manitoba*
- EDI and Treasury Board
 - *Reporting to Manitobans on Performance*
- EDI and HCMO
 - *HCMO Annual Report*
- EDI and Public Health Agency of Canada (new)
 - *Chief Public Health Officer's Report on the State of Public Health in Canada 2009: Growing Up Well – Priorities for a Healthy Future*

Influencing Public Policy

TREASURY BOARD PLANNING AND BUDGETING:

- EDI and new child-centred budget process beginning in 2005/06 Estimates
 - In 2004, Treasury Board directed HCCC partner departments and HCMO to develop an annual, cross-departmental, evidence-based budget process to allocate (and reallocate) funds toward ECD
 - about 4% of provincial budget = ECD investments
 - but 8% of Manitoba population = ECD age group
 - limited evaluation capacity across government (only 0.3% of total ECD budget)
 - investments in prevention increased from 30% of ECD in 2000 to 42% in 2005
- EDI and new Manitoba government planning process beginning in 2007/08 Estimates
 - Linking priorities to strategies to performance measures (now required in departmental Annual Reports)
 - EDI = core performance measure for HCM Strategy

Influencing Public Policy

POLICY PLANNING AND PROGRAM IMPLEMENTATION:

- EDI and 1997 Manitoba Birth Cohort Study
 - Rural and Francophone sample ($n = 635$)
 - Outcome measures at age 3, age 5 (EDI), and age 8 (Grade 3 assessments)
- EDI and Manitoba Education
 - Community Schools initiative (site selection based on EDI)
 - Education strategy for Low-SES communities
- EDI and Manitoba Family Services
 - Family Choices multiyear child care plan (will target new facilities using EDI)
 - All Aboard – poverty reduction and social inclusion strategy
- EDI and Manitoba Health
 - Community health assessment and Regional Health Authorities (RHAs)
- EDI and Healthy Child Committee of Cabinet (HCCC) and Treasury Board
 - Triple P – Positive Parenting Program (for 0-5) announced in March 2005
 - province-wide phase-in (national first) began in November 2005 (based on EDI)
- EDI and Aboriginal Issues Committee of Cabinet and HCCC
 - Closing the Gap initiative (EDI is being used for planning)

5. Evaluating Population-Level Effects of Investments in ECD

Evaluating Population-Level Effects of ECD Investments

- **2006 EDI and 2006 EDI Parent Survey**
 - population-based baseline for evaluation of Triple P (parenting and child behaviour in 2006)
 - multiple EDI baseline as Triple P is phased-in across Manitoba regions and communities (2005 to present)
 - beginning in 2007, EDI will be collected province-wide every 2 years
- **Linking Families First Screening to EDI to Grade 3**
 - **Universal, post-partum screening**
 - population-based ($N = 13,000$ births annually)
 - includes module on alcohol use during pregnancy for evaluating FASD prevention (national first)
 - partners: Manitoba Regional Health Authorities
 - Linkage from birth to Kindergarten to Grade 3 assessments and beyond

PART III:



Implications for Action

Investing in Early Childhood Development: The Economic Imperative

- Leading economists have shown the importance of ECD to our province and country's economic future. Knowledge is the engine of the 21st century economy. Better brains and innovative ideas fuel economic growth, create jobs, increase wealth, and secure our financial future.

*“The real question is how to use the available funds wisely. The best evidence supports the policy prescription:
Invest in the very young.”*

*James J. Heckman, PhD
2000 Nobel Laureate in Economic Sciences*



Shared Destiny:

Our Aboriginal Children and the Future of Manitoba



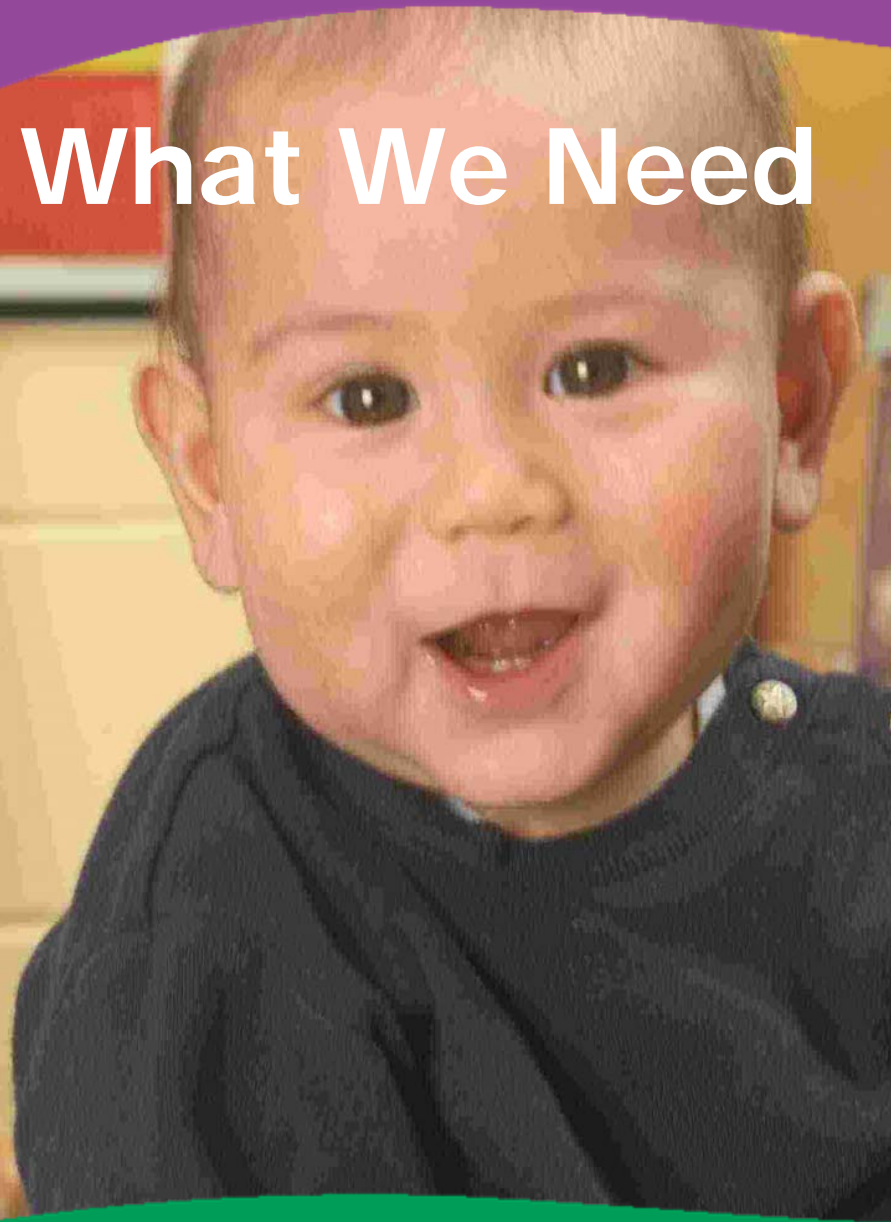
***“Manitoba
cannot
prosper if
Aboriginal
people do not
prosper.”***

***-Honourable Oscar Lathlin,
Minister of Aboriginal and
Northern Affairs
(1947-2008)***

Our ECD Challenge for 2009/10 and the Next Five Years:

Bridging the gap between
what we know
and what we do
to build what we need

What We Need



- A comprehensive Early Childhood Development (ECD) system:
 - publicly funded
 - evidence-based
 - multilevel: universal, targeted, clinical (best policy mix to reach all children that need support)
 - reduces risk factors for ECD
 - promotes protective factors for ECD
 - measures and monitors cross-sectoral ECD expenditures, activities, determinants, and outcomes across the life course and generations

Challenge #1 :

Reaching all parents and families that need support

Challenge #2 :

Reducing inequalities in
children's ECD outcomes
(flatten gradients)

Challenge #3 :

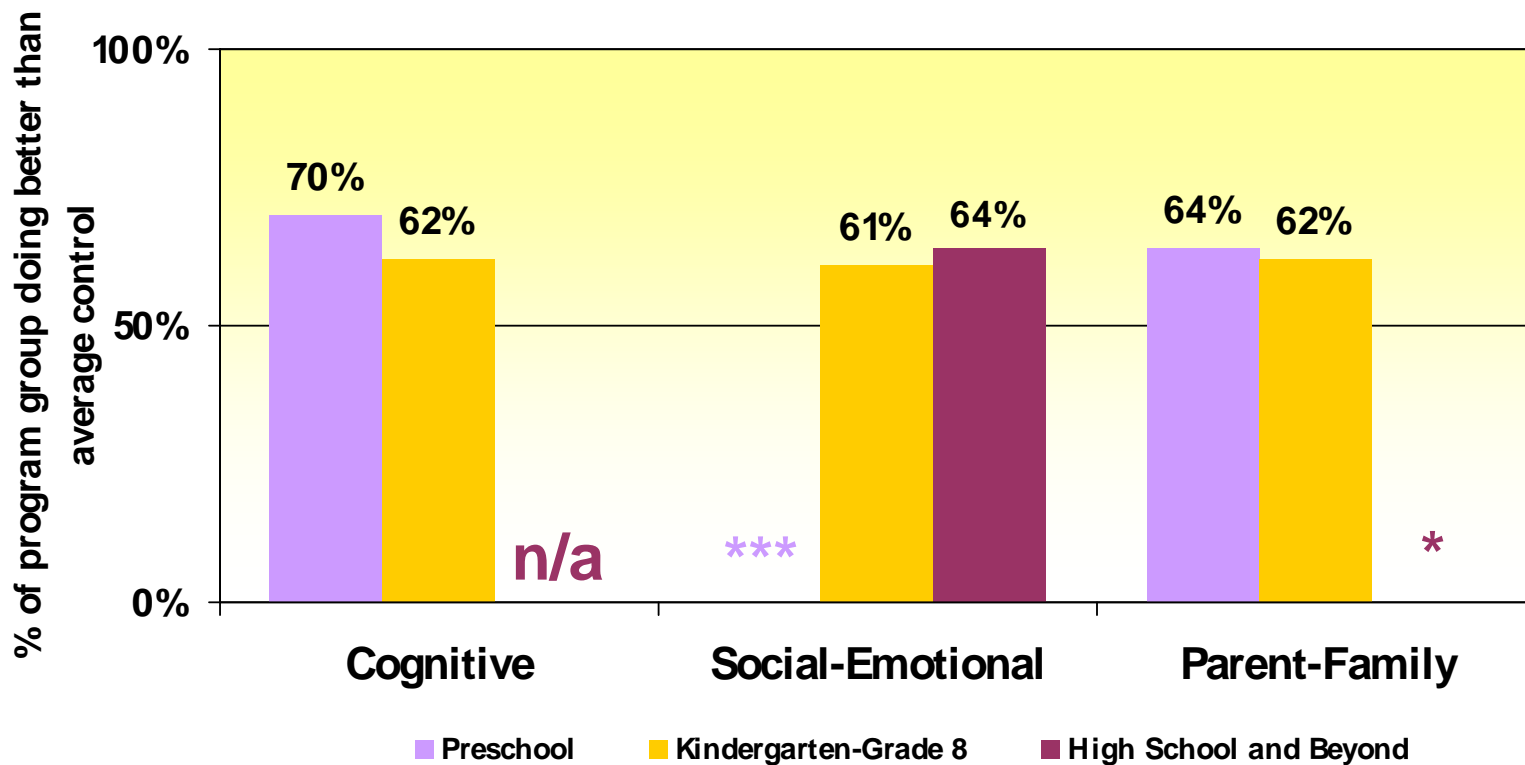
Improving children's
developmental trajectories

Challenge #4 :

Building an integrated
information system to
measure progress in ECD

How Long Do the Effects of ECD Programs Last?

Meta-Analysis of Short-Term, Medium-Term, and Long-Term Effects



Source: Nelson et al. (2003) meta-analysis of 34 preschool programs

“The “head start” that children receive does make a difference in the long run.” (Nelson et al., 2003)

Major Findings: High/Scope Perry Preschool Study at 40

■ Program group ■ No-program group

0% 20% 40% 60% 80% 100%

Arrested 5+ times by 40

36%

55%

Earned \$20K+ at 40

60%

40%

Graduated regular high school

65%

45%

Basic achievement at 14

49%

15%

Homework at 15

61%

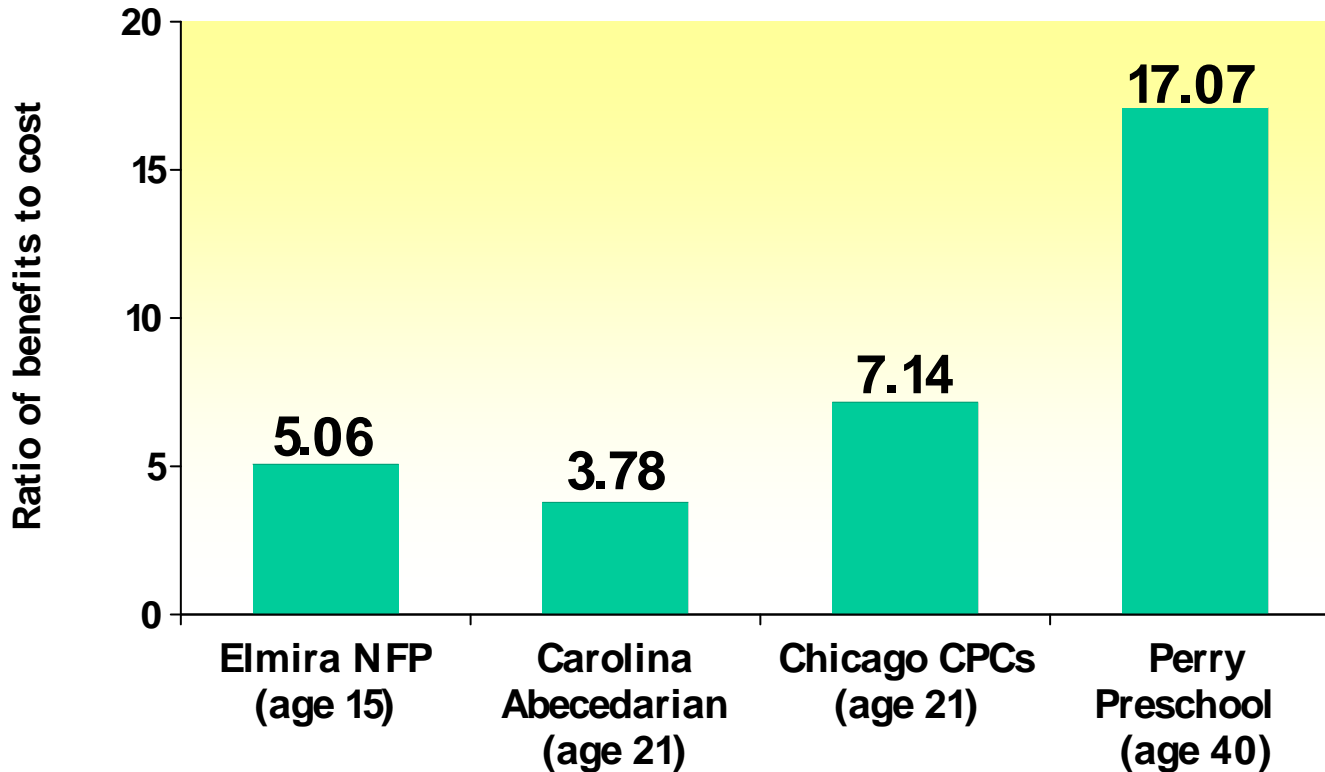
38%

IQ 90+ at 5

67%

28%

Exceptional Returns on Investment: Long-Term Benefit-Cost Ratios for Four Exemplary ECD Programs



Up to 16% rate of return on investment in ECD, compared to the highly touted 6% rate of return of the U.S. stock market (1871-1998)

Sources: Lynch (2004), Rolnick & Grunewald (2003)

Sources: Karoly et al. (1998), Masse & Barnett (2002), Reynolds et al. (2002), Schweinhart et al. (2004)

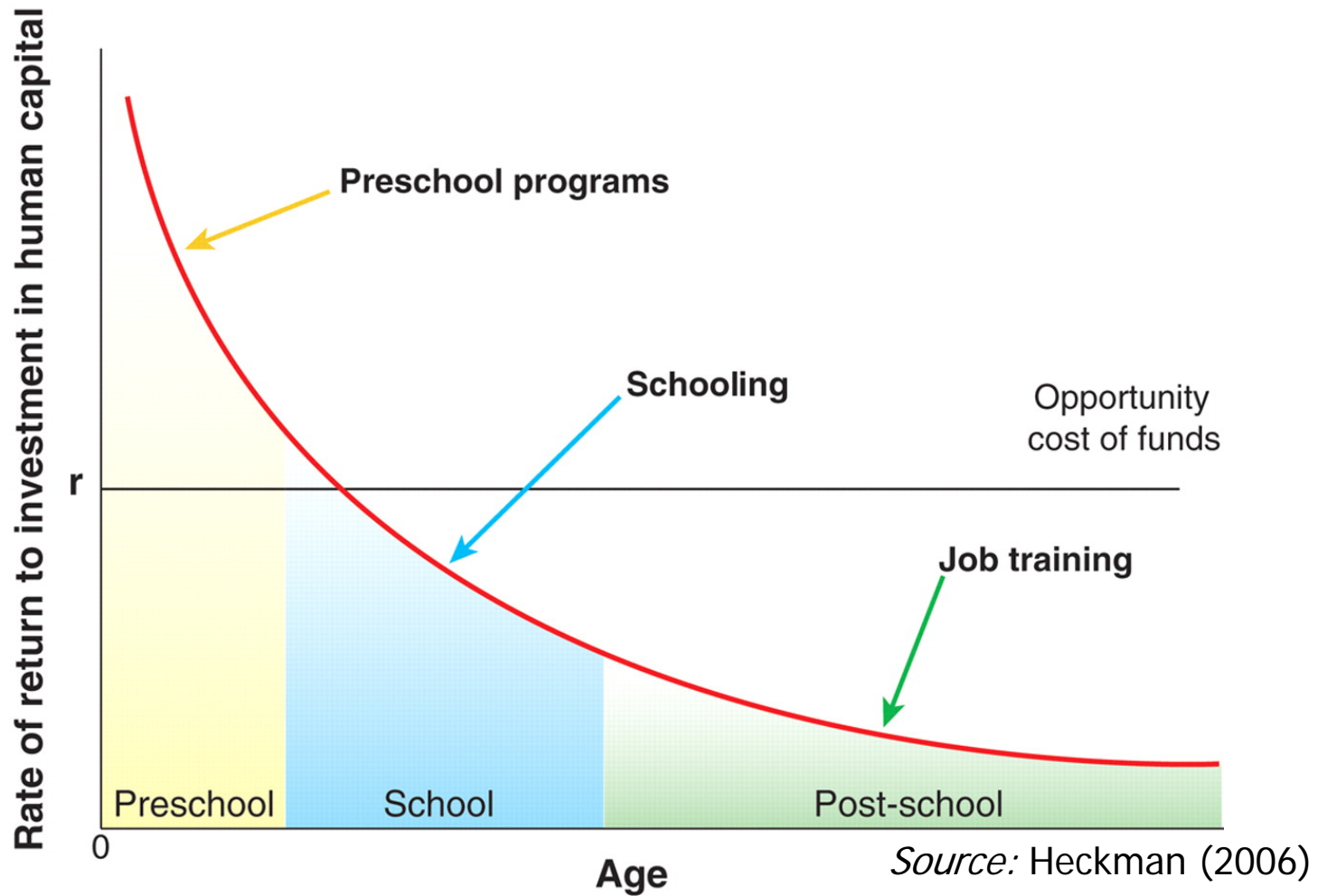
The Cost of Second Chances

*"[We are] a second chance society. Our educational policy is based on a fundamental optimism about the possibility of human change. The dynamics of skill formation reveal that later compensation for deficient early family environments is very costly. If society waits too long to compensate, it is economically inefficient to invest in the skills of the disadvantaged. A serious trade-off exists between **equity and efficiency** for adolescent and young adult skill policies. **There is no such trade-off for policies targeted toward disadvantaged young children.**"*

*James J. Heckman, PhD
2000 Nobel Laureate in Economic Sciences*

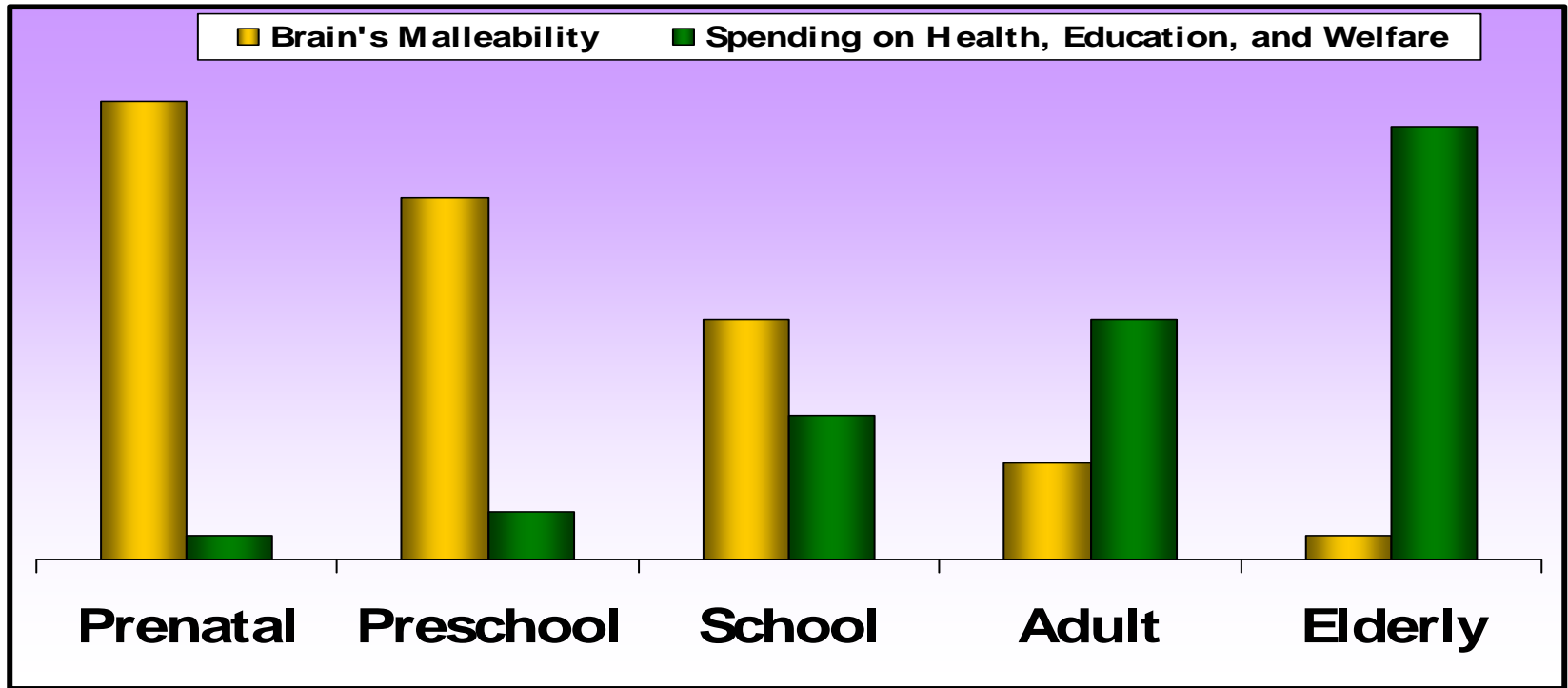
Source: Heckman (2006, p. 1901)

Rates of return to human capital investment



Opportunity Lost . . .

Addressing the Mismatch Between Opportunity & Investment



Adapted from: "How Nurture Becomes Nature: The Influence of Social Structures on Brain Development"
Bruce Perry, Baylor College of Medicine, Houston, Texas.

Conclusions and a Call to Action

- Our success in ECD is **an indicator of the success of our society and democracy**: equality of opportunity, fairness and justice, and social responsibility
- Our success in ECD is also **a forecast of our social and economic future** and is **the best economic investment**
- Communities, governments, researchers, and practitioners must **establish new partnerships**, building on the ECD accomplishments of the past decade to meet the most important ECD challenge of the next decade: **Bridging the gap between knowledge and action to build a comprehensive, effective ECD system for all children, supported by convincing evaluation evidence to help protect the system in the future**

Our Opportunity and Responsibility

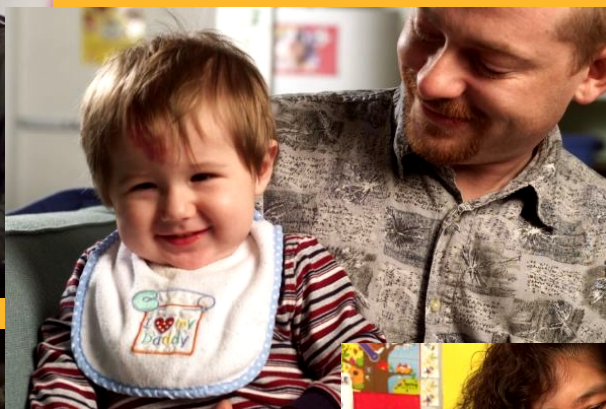
“The charge to society is to blend the skepticism of a scientist, the passion of an advocate, the pragmatism of a policy maker, the creativity of a practitioner, and the devotion of a parent - and to use existing knowledge to ensure both a decent quality of life for all of our children and a promising future for the nation.”



Source: National Research Council and Institute of Medicine (2000, p. 415)

Thank You

For more information, please visit the
Healthy Child Manitoba website:
www.gov.mb.ca/healthychild



Dr. Rob Santos
HCMO

Rob.Santos@gov.mb.ca

The Early Development Imperative: A Pan-Canadian Conference on Population Level
Measurement of Children's Development – November 16, 2009 – Winnipeg, MB

 Healthy Child Manitoba
Putting children and families first

 Manitoba