Measuring Developmental Delays through Household Surveys: pilot efforts in three countries

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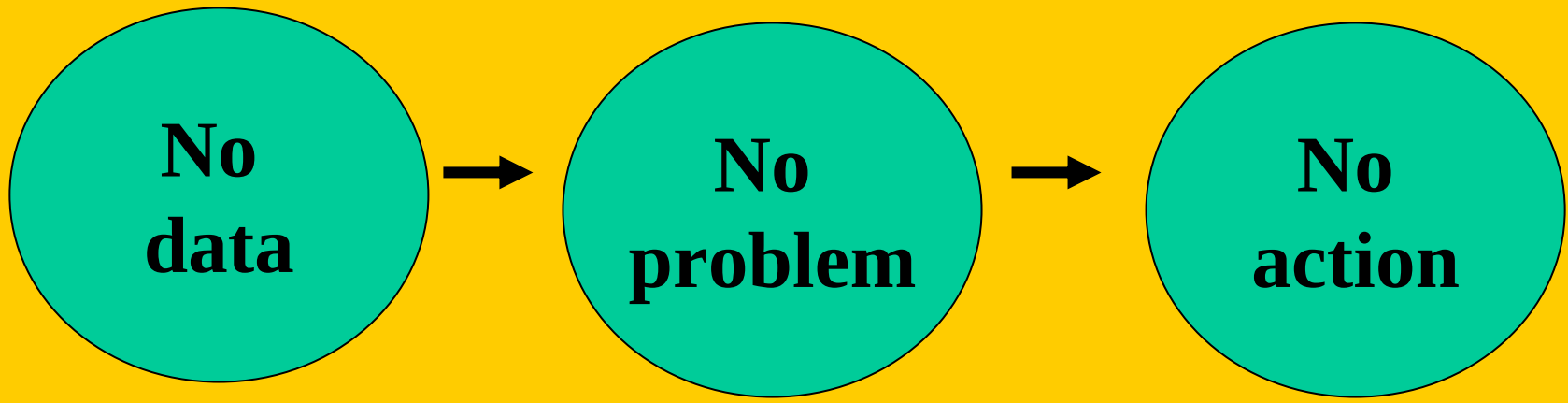
Centre of Excellence for Early Childhood Development, Vaudreuil (Québec) April 26-28, 2006

Trends in Child Health

- Emphasis on child survival, little on quality of life
- Emphasis on child growth, neglect of child development
- New evidence: relevance of child development in human capital formation

Paradigm Trap at Health



Reasons for **No Data** from Health

- Other priorities
  - Survival, nutrition, infectious diseases
- Complexity of measurement
- Risks:
  - Ethical: can anything be done?
  - Discrimination: labeling issues
- Imperfect fit in medical ideology
  - No disease neither disability
  - Mental health?

LAC in Early XXI Century

- Recovery of democratic regimes
- Macro economic stabilization and growth
- Improvements in basic health status
- Initial changes in gender roles
- Better integration: communication, trade, tourism

LAC in Early XXI Century

- Persistence of high poverty and inequality
- Failure of primary education
  - Average years of schooling
  - Wide range
  - Low effectiveness
- Increase in violence: domestic, social

Poor Human Capital Formation In Early Years

IDB Contribution to Human Capital Formation in Early Years

- Measure Magnitude of Problem through Household Surveys:
  - Population based, including poor and excluded
  - Reach children earlier and out of school
  - Done in developing countries
  - Allows exploring links to determinants
  - Less costly than direct observation by experts
- Learn results and costs of interventions

Measuring Developmental *"Delays/Vulnerabilities"* through Household Surveys: pilot efforts in three countries

	Chile	Nicaragua	Honduras
Type of Survey	Quality of Life and Health Survey	Demographic Health Survey (DHS)	Demographic Health Survey (DHS)
Sample	6,300 Households	14,000 households	21,000 households
Date	April 2006	August-December 2006	November 2005-April 2006

First Phase: Exploring Feasibility

- Political
- Technical
  - Building a child development module for the survey
  - Validating the module
    - Learning from initial effort…

Political Feasibility

- Interest from country institutions in collecting and using this information
- Key stakeholders
  - National Institute of Statistics
  - Ministry of Health
  - Other government sectors interested in this information
    - Ministry of Education, Ministry of the Family
  - NGOs
- Inter-sector collaboration

Technical Feasibility

- "Fitting in" a child development module in a larger, pre-defined survey
  - Limited number of items
  - Close ended questions (Yes / No)
  - Built on evidence (domains)
  - Wording needs to be adapted to local language, culture and needs

⇨ Required active participation of key stakeholders and local experts in child development

⇨ Short timeframe as a motivation to work towards a common goal

Content Validity: Domains

Classical Domains	Functional Domains
• Language • Cognitive • Socio-emotional • Gross motor • Fine motor	• Attention & regulation • Engagement • Purposeful communication • Complex communication • Symbolic ideas • Logical Thinking

✓ Earlier experience of measuring developmental delays through a household survey (NHIS-D) by the NCHS (1994-95)
✓ Socio-emotional screening questionnaire of Bayley III
✓ Easy to observe

From Theory to Practice

	Chile	**Nicaragua**	**Honduras**
Age Bands	• 2-6 months • 7-11 months • 12-23 months • 24-35 months • 36-47 months • 48-59 months • 60-72 months	• 7-11 months • 12-23 months • 24-35 months • 36-47 months • 48-59 months	• 7-11 months • 12-23 months • 24-35 months
Items per Age Band	5-9 items	5 items	3-6 items

Nicaragua's domains

	7-11m	12-23m	24-35m	36-47m	48-59m
Language					
Cognitive					
Socio-emotional					
Gross motor					
Fine motor					
Attention & Reg.					
Engagement					
Purposeful comm.					
Complex comm.					
Symbolic Ideas					
Logical thinking					

Type of Questions

(e.g.Chile, 12-23 months)

- Does (NAME) usually pay attention to things that interest him/her such as toys, picture books or a person he/she likes for as long as a minute?
- Does (NAME) usually seem happy or pleased when he/she sees his/her favorite people?
- Does (NAME) walk without holding on to anything?
- Does (NAME) show what he/she wants or needs by using actions or words, such as leading you by the hand to open a door or saying words like “juice”, “more” or “that”?
- Does (NAME) says two or more different meaningful words like “mommy” “daddy” or other words?
- Does your child copy or imitate many of your sounds, words, or actions while playing with you (e.g., if you make funny faces and sounds, does she or he copy them)?

Instructions

- **Yes:** “Yes”, “all the time”, “most of the times”
- **NO:** “No”, “almost never”, “sometimes”, “can’t tell”

CASE:

- One or more negative responses
  - Child has difficulties to perform one or more ability

What data are we looking for?

- Percentage of children who
  - present difficulties to perform one or more ability ("vulnerabilities, "sub-optimal developmental trajectories")
  - are developing within "expected" pace (country expectations, developmental assets)
  - children who might have comparative disadvantages / advantages in the near and long future

Children who do not achieve their full potential

What data are we looking for?

- **Determinants of early child development**
  - Place of residence (urban / rural)
  - Household characteristics
  - Parent's characteristics
  - Domestic violence
  - Children's characteristics (e.g. nutritional status, access to health)

First Validation Study

(From Theory to Practice…)

	Chile (n=164)	**Nicaragua** (n=100)
Method	Health setting	Home visits
Gold Standard	Medical charts	Direct Observation
Sensitivity	86%	62%
Specificity	83%	100%

Validation Study in Nicaragua: Sample Characteristics

Household characteristics	Urban-marginal	40%
	Rural	60%
	% without access to safe drinking water	95%
	% without sewerage connection	99%
Mother's education	Illiterate	8%
	3 years of education or less	41%
	6 years of education or less	83%

Findings….

- Child Development Module
  - **24% of children** have difficulties to perform one or more ability

- Direct Observation
  - **39% of children** have difficulties to perform one or more ability

Findings

- False positives: 0
  - Negative responses of the mothers (“the child cannot perform an ability) are valid
- False negatives: 15
  - Positive responses of the mothers (“the child can perform all the abilities”) were not valid (social desirability factor)

False negatives

1. *“(NAME) scribbles (lines or circles)?”* (4/1)
   - Decision: Direct observation
2. *“(NAME) pays attention to games, storytelling, books with illustrations, or objects of his/her interest?”* (3/1)
   - Decision: Direct observation
3. *“(NAME) is able to explain why he/she wants something? E.g.: why he/she wants water?”* (2/2)
   - Decision: change wording

These improvements on these 3 items could increase sensitivity to 85%

Lessons learned

- Political feasibility
  - Countries are interested and in need of this information
  - Process favors and requires inter-sectoral collaboration

Lessons learned

- Technical feasibility
  - It is possible to build a child development module, with acceptable content validity, through a participatory process with country experts within a limited timeframe
  - Trade off between technical refinement and local ownership, process favors capacity building at the local level
  - Initial effort shows acceptable validity and reliability ***but*** require much more refinement, validation study in larger, representative samples, in interview "real" conditions

Thank you….