

# Early child health and cognitive outcomes

Secondary analysis using Growing Up in Ireland survey data

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# Introduction

- Little attention outside health sector has been paid to impact of child health on education until recently

## *Why?*

- knowledge about associations between health and education relatively new, slow to gain impetus (Politt, 1990)
- perception that child health is a by-product of education, rather than a factor that may determine educational outcomes (Suhrcke & de Paz Nieves, 2011)
- relationships are complex! (Suhrcke & de Paz Nieves, 2011)

# National policy context

- Relevance of child health to educational outcomes has been acknowledged in recent Irish policy documents and initiatives

Examples:

- *Healthy Ireland* (Dept of Health, 2013, p. 49).
- Early childhood: *ECCE* (2010), *AIM* (2016), *ABC* (2013-2017)

# Educationally relevant...

Basch's (2010) concept of 'educationally relevant health factors' is useful:

- ... those which have *direct or indirect effects on cognitive performance*.

Applying this concept can:

- help to identify aspects of children's health relevant to their learning and engagement with education
- help guide policy and strategies for support within the education sector.

# International research

- Child health has small, significant independent effects on cognitive achievement among younger children (Guo & Harris, 2000; Kaestner & Corman, 1995; Spernak et al., 2006; Eide et al., 2010).
- There is evidence of long-term negative consequences of childhood ill health (Case et al., 2005; Currie et al., 2010; Wisk & Weitzman, 2016).

# National research

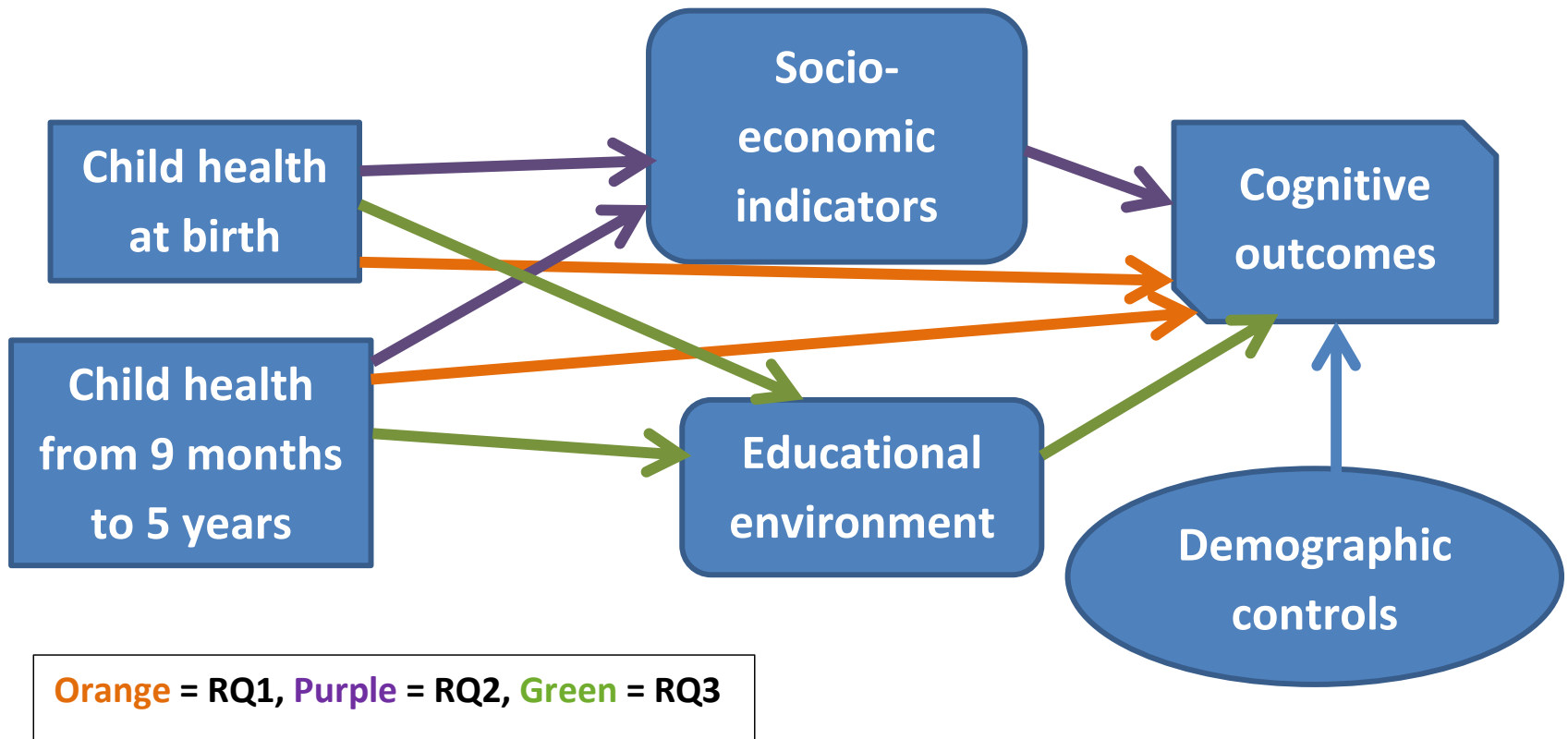
- Discourse on ‘educational disadvantage’ (Kellaghan et al., 1995; DES, 2005)
- Majority of existing national research examining cognitive performance:
  - looks at older children
  - embeds findings in the education system
  - focuses on socio-economic inequalities and learning environments
  - does not consider child health
- Some exceptions (McGinnity et al., 2015; McCoy et al., 2012)

# Present study

- Are effects of child health on cognitive performance independent of, or mediated through, other characteristics?
- If independent, can argue that child health is educationally relevant.
- Relevant to *Better Outcomes, Brighter Futures*
- Also relevant to AIM and ABC initiatives
- early childhood ill-health penalty: *impact of early childhood ill-health on cognitive performance* (Sullivan et al., 2010)

# Research Questions

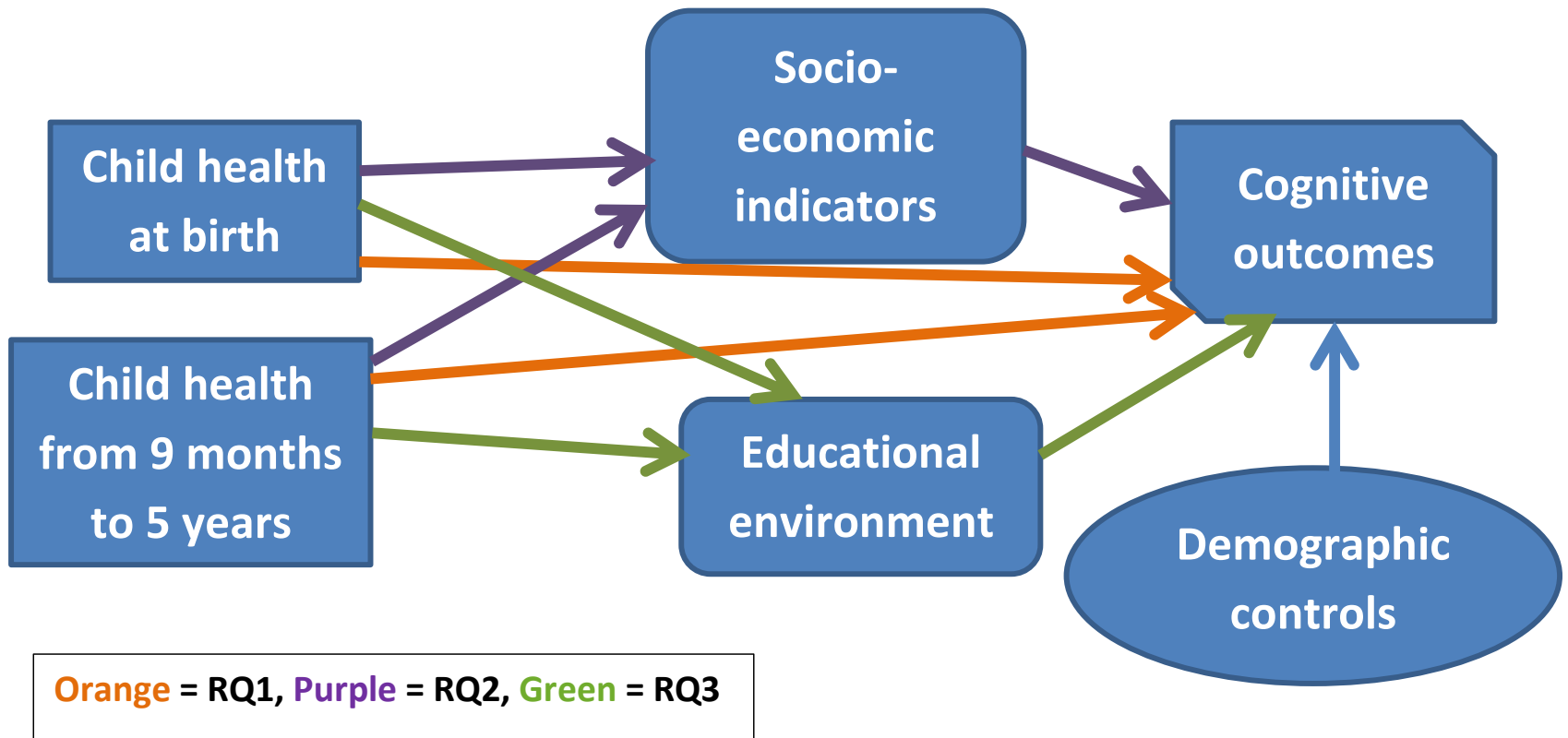
1: What is the penalty associated with ill-health at birth and in early childhood on cognitive performance at 5 years of age?





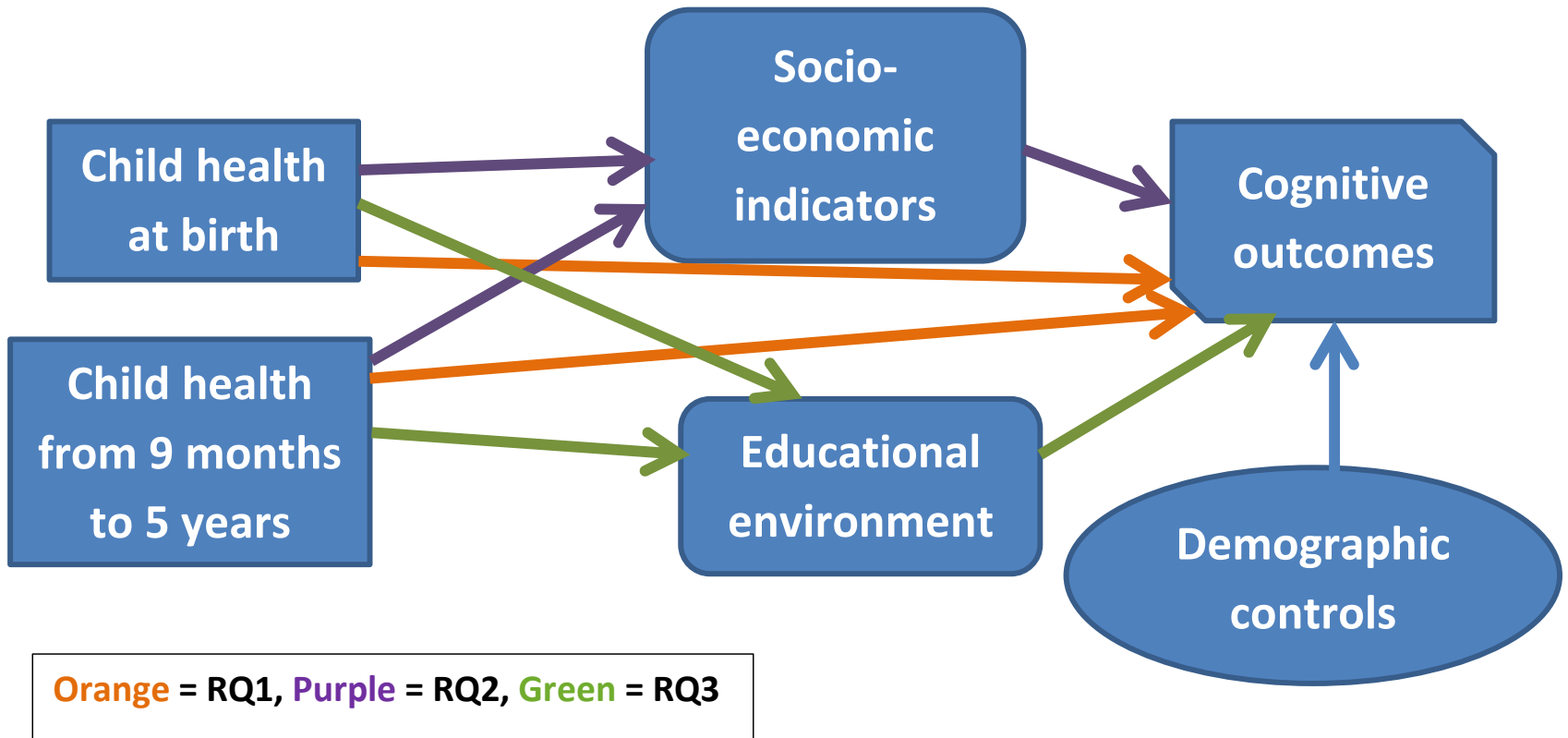
# Research Questions

2: Is this penalty mediated by socio-economic context?



# Research Questions

## 3: Is this penalty mediated by educational environment?



# Measures and methods

**Outcomes:** vocabulary and reasoning test scores (W3)

**Block A (independent variables):**

- Health at birth (W1)
- Health from 9 months to 5 years (W1, W2, W3)

**Block B (controls):** Demography (W1)

**Block C:** Socio-economic characteristics (W1)

**Block D:**

- Educational environment at home (W1, W2, W3)
- Educational environment outside home (W3)



# Results: Which child health indicators?

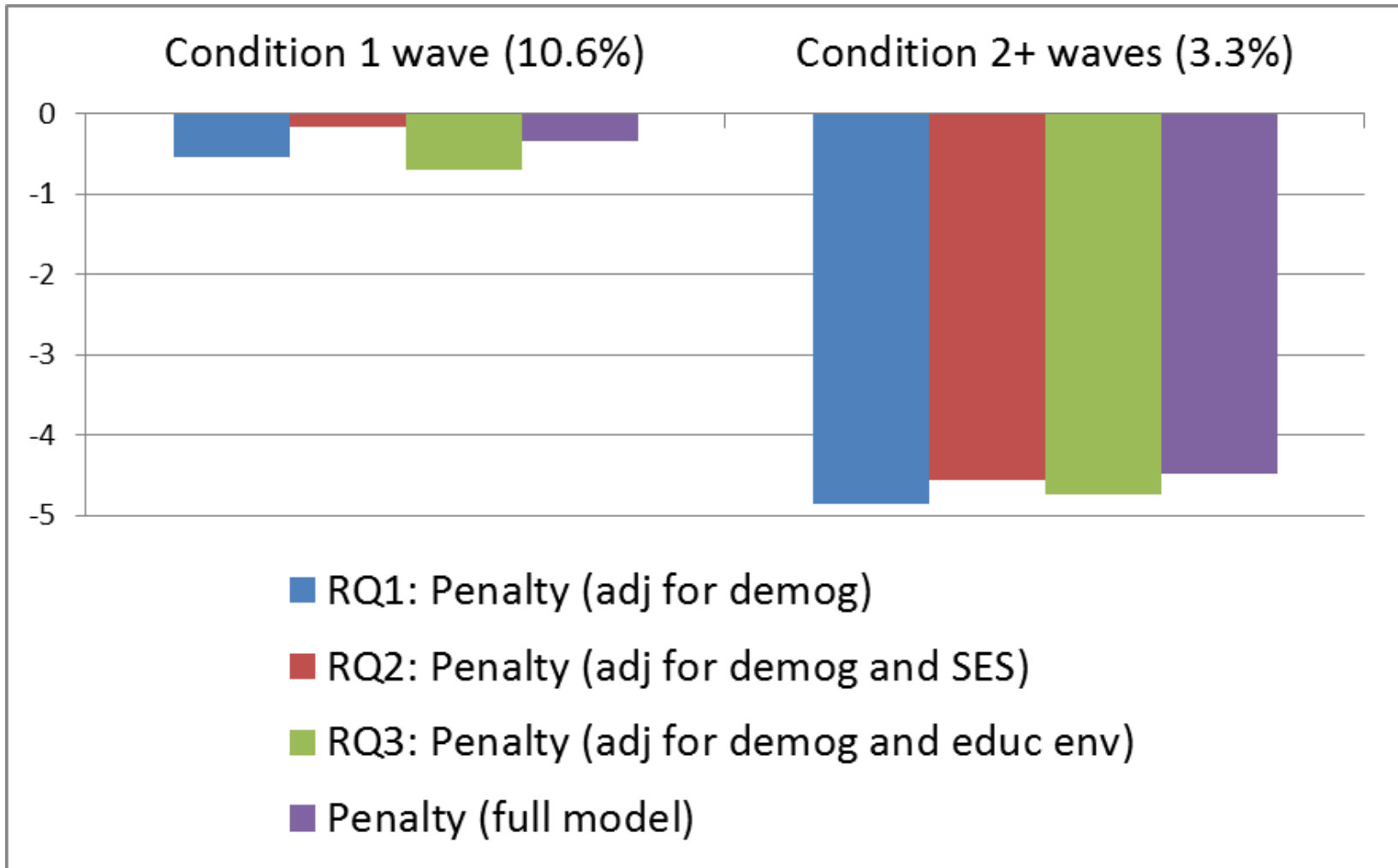
## Health at birth:

- ***low birth weight/pre-term status*** (vocabulary)
- **carer-rated child health at birth** (reasoning)
- days spent in hospital by child following birth

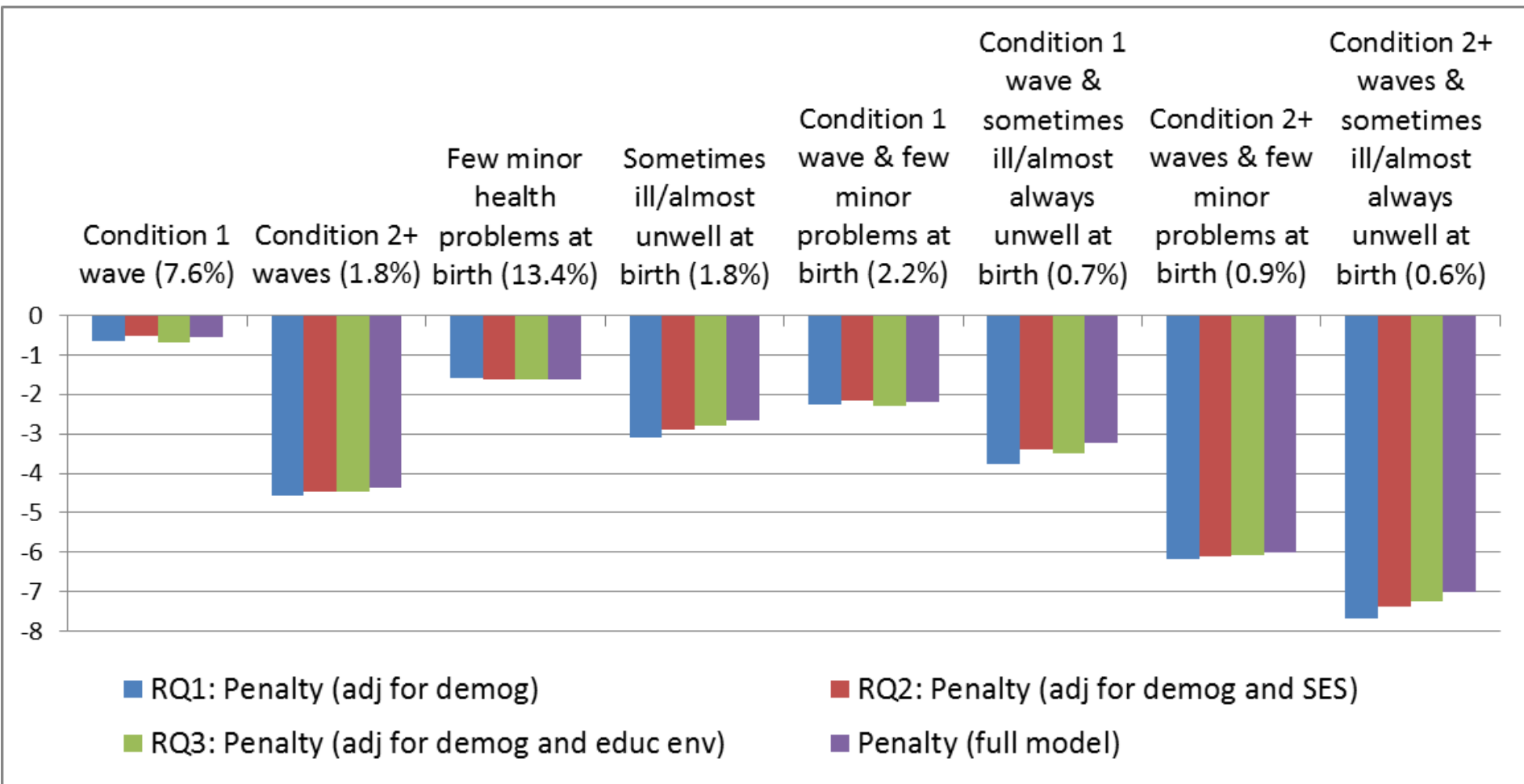
## Health from 9 months to 5 years:

- **presence of one or more carer-reported condition(s) that impact(s) on the child's daily life** (vocabulary and reasoning)
- presence of carer-reported poor health
- presence of obesity in the child

# Results - Vocabulary



# Results - Reasoning



# Conclusions

1. Some measures of child ill health are associated with significantly lower test scores in both vocabulary and reasoning at age 5
2. 'Health penalties' are largely independent of demographics, socio-economic and educational environments
  - Child ill health explains only small % of variation (1%), but ES not insubstantial
  - Consistent with international research
  - Limitations: not all potentially relevant measures included e.g. health environments/behaviours, psychological wellbeing (attention skills? – Duncan et al., 2007)



# Further research/Last word

- Which kinds of health conditions?
- Extend to NI using MCS (5 waves)
- Older children (evidence of increase in disparities over time?)
- birth weight/pre-term birth status not significant; not relevant?
- increase in low birth weight and pre-term babies over the past two decades (OECD, 2012; Blencowe et al., 2010)
- important to be mindful of cognitive measure used



# Thank you

## Any questions?

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