Investing in the pre-school years – thinking ahead

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Overview

- Arguments for public investment in the preschool years
- Are there “critical” or “sensitive” periods in social/emotional/cognitive development?
- Should we actively seek out problems?
- Changes in universal NHS child health services and their impact
- Can we identify problems early?
- Evaluating universal services
Optimising return on investment

Ref: Heckman & Masterov 2007. Similar curves for more advantaged children who receive larger parental investment in the early years.
Critical and sensitive periods

- The visual system and amblyopia
- Sensitive periods
- Is there a critical or sensitive period for social and cognitive development?
Early adversity and programming of stress responses

Sensitive Periods in Early Brain Development

Graph developed by Council for Early Child Development, 2000
Conduct disorder – should we be seeking it out early?

- Extreme antisocial/aggressive behaviour
- Genetic and environmental determinants
- Strong association with language delay
- Probably two types:
  - “Lifecourse persistent”
  - “Adolescence-limited”
Is there a case for screening?

- Wilson & Jungner’s criteria for screening programmes:
  - The condition should be an important health problem
  - The natural history of the condition should be understood
  - There should be a recognisable latent or early symptomatic stage
  - There should be a test that is easy to perform and interpret, acceptable, accurate, reliable, sensitive and specific
  - There should be an accepted treatment recognised for the disease
  - Treatment should be more effective if started early
  - There should be a policy on who should be treated
  - Diagnosis and treatment should be cost-effective
  - Case-finding should be a continuous process

*Wilson, Minnis, Puckering, Gillberg ADC 2009;94:812-816*
Early intervention

- ... is almost certainly better than late intervention – but it’s hard to prove it!
  - Evidence that conduct disorder is easier to treat early
  - Some support from Glasgow Mellow Babies / Mellow Parenting findings
  - Family-Nurse Partnership trials....
  - Much more work needed – particularly trials comparing interventions
Early intervention

- David Olds – 3 randomised controlled trials (RCTs) in US with long-term follow-up
- Intervention was 9 antenatal and 23 postnatal nurse visits before age 2 vs control – addressing:
  - General health promotion
  - Maternal personal development
  - “Competent care of their children”
Early intervention

- Compared with controls, adolescents born to women who received nurse visits displayed fewer:
  - instances of running away (0.24 Vs 0.60; P=.003),
  - arrests (0.20 Vs 0.45; P =.03),
  - convictions and violations of probation (0.09 Vs 0.47; P<.001),
  - lifetime sex partners (0.92 Vs 2.48; P=.003),
  - cigarettes smoked per day (1.50 Vs 2.50; P=.10),
  - days having consumed alcohol in the last 6 months (1.09 Vs 2.49; P = .03).
- reported behavioural problems related to use of alcohol and other drugs (0.15 Vs 0.34; P=.08).
Early identification of problems in the population

- Growing Up in Scotland cohort
- ALSPAC studies
- Glasgow pilot work with health visitors
- SDQ studies
Early identification - GUS

- Looking for predictors of persisting conduct problems at 3, 4 and 5 years
- Used Strengths & Difficulties Questionnaire
- 2070 children born in 2003 with SDQ data at all time points
- Comparing:
  - 90 children with conduct problems at all 3 times
  - And 1557 who never had conduct problems
## Early identification - GUS

<table>
<thead>
<tr>
<th></th>
<th>Adjusted odds, C.I. and P value</th>
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<tbody>
<tr>
<td><strong>No. of natural parents in household</strong></td>
<td></td>
</tr>
<tr>
<td>Two</td>
<td></td>
</tr>
<tr>
<td>One or none</td>
<td>2.10 (1.28, 3.44) &lt;0.01</td>
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<tr>
<td><strong>Child’s general health</strong></td>
<td></td>
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<tr>
<td>Very good or good</td>
<td></td>
</tr>
<tr>
<td>Fair, bad or very bad</td>
<td>3.32 (1.35, 8.19) 0.01</td>
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<tr>
<td><strong>Child had some difficulty being understood</strong></td>
<td></td>
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<tr>
<td>No</td>
<td></td>
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<tr>
<td>Yes</td>
<td>1.93 (1.08, 3.44) 0.03</td>
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<tr>
<td><strong>Maternal smoking during pregnancy</strong></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>2.35 (1.32, 4.19) &lt;0.01</td>
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<tr>
<td><strong>Agree that smacking is sometimes the only thing that will work</strong></td>
<td></td>
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<tr>
<td>No</td>
<td></td>
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<tr>
<td>Yes</td>
<td>2.07 (1.13, 3.79) 0.02</td>
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<tr>
<td><strong>Frequency child taken to visit other people with children</strong></td>
<td></td>
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<tr>
<td>Fortnightly or more often</td>
<td></td>
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<tr>
<td>Less often or never</td>
<td>2.16 (1.14, 4.09) 0.02</td>
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<tr>
<td><strong>Frequency child is read to</strong></td>
<td></td>
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<tr>
<td>Daily</td>
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<tr>
<td>Less often</td>
<td>1.86 (0.98, 3.52) 0.06</td>
</tr>
</tbody>
</table>
Early identification - ALSPAC

- Avon Longitudinal Study of Parents and Children
- Videos of children parents at age one, in 1992/3
- Psychiatric assessment at age 7.5 years (DAWBA)
- 60 children with psychiatric diagnoses compared with 120 children with no psychiatric diagnosis
ALSPAC – preliminary results

- Positive parenting behaviours are significantly less frequent among parents of children who went on to get “oppositional and conduct diagnoses”
- Negative parenting behaviours may be associated with CD/ODD diagnoses
- Low levels of maternal activity and vocalisation are associated with attention-deficit/hyperactivity disorder (ADHD)
Universal child health services in Scotland

- “Nursing for Health”
- “Review of Nursing in the Community”.
- Scottish implementation of HFAC4
- The Glasgow Review of Health Visiting
- The move towards large “skill-mix” teams
- Detachment of health visitors from PHCTs and reduced GP involvement
- Reintroduction of a 30m universal visit
- (Family Nurse Partnership pilot)
Health for all Children (Hall4)

Universal Core Programme
All families offered core screening and surveillance programme, immunisation, information, advice on services

Needs Assessment

Universal Core Programme – no additional input needed
Contact or appointments on request

Additional support from health visitor as agreed with family
Structured support (e.g. first time mother, breastfeeding problems, mental health problems)

Intensive support required
Structured inter-agency support for individual families or communities (e.g. child on child protection register, looked after or disabled child, parental stresses)

Hall4, ScotGov, 2005:
www.scotland.gov.uk/Publications/2005/04/15161325/13288
Early Identification: universal HV contacts

Pilot data - West Glasgow July-Dec 2009

- 13 month assessment evaluating parent-child interaction and emotional wellbeing of parent
- 30 month assessment of parenting stress, child behaviour and language development
Evaluation principles: Glasgow pilot

- **General principles:**
  - Use of standardised tools
  - Data useful for 4 purposes:
    - Clinical decision making
    - Needs assessment
    - Performance management
    - External evaluation
The 13 month contact
“There are no ‘quick and ready’ measures of attachment, and those claiming to measure such a construct are most likely measuring something else”*.  

13 month contact

- Adult wellbeing scale:
  - Anxiety
  - Depression
  - Externally-directed irritability
  - Internally-directed irritability

- Observational assessment of parent-child interaction*
  - “may be problems / “probably no problems”

Does the 13 month assessment improve targeting of resource?

The 30 month contact
30 month assessment

- Parenting Daily Hassles
  - poor completion rate
  - Relatively few high scorers

- Richman Behaviour Checklist
  - Reasonable completion rate
  - Some irrelevant questions
  - Threshold too low
  - High scores strongly associated with language delay
30-month visit - language

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>%</th>
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<tbody>
<tr>
<td>Can your child put 2 words together?</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Does your child know 50 words?</td>
<td>33</td>
<td>10</td>
</tr>
</tbody>
</table>

• Half the children with language delay are in the lowest “risk” category (Core HPI)
• No clear social patterning
Factors associated with language delay

- Several factors, as expected, but use of services was the only factor remaining in multivariate analysis.
  - But this only accounted for 22% of cases
- Bilingualism may also be important
- Conclusion – language delay can only be identified if we ask about it, it can’t be predicted!
Does the 30 month assessment improve targeting of resource?
The Strengths and Difficulties Questionnaire – www.sdqinfo.org

- A brief behavioural screening questionnaire for 2-16 year olds.
- 3 versions – parent, teacher, self-complete
- Originally developed as a screening tool for psychiatric problems in children
  - but can be used to assess change after interventions
  - and can be used to compare the wellbeing of populations
The SDQ

- 25 questions used to measure five aspects of the child's development:
  - emotional symptoms
  - conduct problems
  - hyperactivity/inattention
  - peer relationship problems
  - pro-social behaviour

- Along with questions about impact of problems, if relevant
- Takes about five minutes to complete
SDQ data collection

- At a new routine 30 month health check by a community nurse – SDQ (parent version) and language assessment
- Before school entry (completion by nursery staff)
- In 3rd year primary school at age 7 (teacher complete)
- and in 6th year primary school at age 10 years (self complete)
The new 30-month visit

- Initial pilot work using language screen and SDQ just completed for 540 children in NHS GGC
- Likely to be offered by HVs to children in NHS GGC in near future
- New research allowing detailed assessment of children who appear to have problems at the visit (+/- some who don’t) is about to start
The new pilot Glasgow 30 month assessment

– breaking news…
Primary school entry SDQ

- Data available for about 75% of Glasgow school entrants – about 3,600 in total
- Good questionnaire completion rates in most nurseries
- Ongoing qualitative study of impact of data collection on nursery and primary staff
- Study comparing parent and staff completed SDQs: in progress
Conduct problems at primary school entry

Corrected for deprivation, nursery, looked after status, sex
Conclusions

- Stratifying risk in early infancy is inadequate
- We need to continue some universal child health contacts
- We should acknowledge that HVs (and GPs) are best placed to identify vulnerability early
- Health visitors (and GPs) probably need additional training
- We need to develop new care pathways
- We need better population-level data
  - Specifically to assess whether interventions work
  - Involve GPs and their IT systems?
Evaluating universal services – future plans

- Disentangling the impact of neighbourhood, availability/use of services
- Linkage of health and education data: plotting trajectories from 2 to 10 years
- Identify effects of area, nursery, school, and use of services on these trajectories
- Trials of interventions aiming to improve population wellbeing and reduce inequalities
Acknowledgements

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