



UNIVERSITY OF  
LIVERPOOL

Cost benefit analysis  
and small scale service  
intervention involving  
parents and babies: the  
Liverpool Baby Matterz  
initiative as a pilot case  
study

Mark O'Brien

*Baby  
Matterz*

**innovation**

centre for lifelong learning





**Cost benefit analysis and small scale  
service intervention involving parents  
and babies: the Liverpool Baby Matterz  
initiative as a pilot case study**

First published by the Educational Development Division, Centre for Lifelong Learning, 128 Mount Pleasant, Liverpool, L69 3GW  
Tel: 0151-794-1190. Fax 0151-794-2512.

© Educational Development Division, Centre for Lifelong Learning,  
University of Liverpool, August 2008.

Commissioned by The Innovation Unit.

ISBN 0 906370 52 3

Typography and design by Robin Sellers.

Printed by the University of Liverpool Print Services.

UNIVERSITY OF LIVERPOOL

**Cost benefit analysis and  
small scale service  
intervention involving parents  
and babies: the Liverpool  
Baby Matterz initiative as a  
pilot case study**

**Mark O'Brien**

*Senior Research Fellow in the  
Educational Development Division  
at the Centre for Lifelong Learning,  
University of Liverpool*



## **Acknowledgements**

The Baby Matterz project in the City of Liverpool has come about through a partnership between The Learning Partnership, The Innovation Unit\*, Liverpool Children's Services and the Liverpool Primary Care Trust. This research has been made possible by funding from The Innovation Unit. In particular, the research that lies behind the reflections offered in this project paper, owes a great deal to Sue Shinkfield of Liverpool Children's Services, Aulden Dunipace of The Learning Partnership and Deryn Harvey of The Innovation Unit. Thanks for research support and professional insight are also due to Judi Boyce and Dave Woodhouse of Liverpool Children's Services, Liz McLaughlin of the Liverpool Primary Care Trust, Sharon Hannah of A Quiet Place and Claire McEneaney of The Innovation Unit. The unique combination of professional backgrounds and skills represented by this consortium has made possible the truly innovative and highly promising initiative that is Baby Matterz.

\* Formerly a part of the Department for Education and Skills that has now largely been absorbed into the Department for Children, Schools and Families.



# Cost benefit analysis and small scale service intervention involving parents and babies: the Liverpool Baby Matterz initiative as a pilot case study

## Introduction

Service initiatives such as Baby Matterz are increasingly subject to cost-benefit audit for the purpose of initial or continued government support. The question at the heart of any cost benefit analysis is: 'do savings to the public purse that result from the initiative, justify the expenditure on the programme of work involved?' The ways in which this question is framed with respect to a particular initiative or intervention, and the specific judgements formed based upon cost-benefit calculations, inevitably reflect its social and political context, design characteristics and the local and national agendas informing it. They are also affected by value judgements based upon the worth attached to the effects of a given programme by government and public opinion, irrespective of the financial balance sheet. Cost-benefit analysis, then, rarely conforms to an 'ideal-case' scenario, where decisions regarding sustainability are based purely on a quantitative financial calculus. In reality, the interpretation and ultimate meaning of cost-benefit assessments are connected to perceptions of social benefit (Dockins *et al.* 2002). This kind of understanding has been incorporated into some approaches to cost-benefit analysis. One example of this is 'social auditing' in which service-user experience, stakeholder dialogue and community participation are incorporated into programme evaluations. Another is the 'community-benefit measurement' approaches that are becoming influential in the US, for the purpose of assessments of tax-exemption status for charities and

the non-profit hospitals sector (White 2008).

This said, in some parts of the industrialised world, and especially in the US, financial cost-benefit analysis is now a well established approach for financial audit, and is frequently found as an element in the design of service delivery, implementation and evaluation. A significant amount of work has been done that looks at the cost-benefits of education, health and social interventions that involve parents (though to varying degrees of rigour). In 2007 a research report produced for the Department for Children, Schools and Families (DCSF) by the research group London Economics, brought together much of this work in a wide-ranging survey. The key themes that emerged from this study will be presented in a summarised form in this paper. But first we will consider work that focuses on the broad benefits, tangible and intangible, of involving parents in services in various ways and at different levels.

### **The benefits of involving parents in service delivery initiatives**

There is a growing awareness of the beneficial effects of involving parent-carers in programmes designed to support children and young people. One location for such programmes is the family home. Studies of home-based interventions have found that, though a certain level of demand is placed upon parents through such approaches, this is offset by beneficial effects, providing that resources are adequate (Trudgeon and Carr 2007). Interventions based around home visits can be especially useful in situations where difficulties of community access resulting from mistrust, or misperceptions of professionals is an issue (Smith and Randhawa 2006). Where changing child behaviour is the chief aim of an initiative, parent-carer involvement has been shown to be important by many studies. This has been identified as being a significant factor, for instance, in programmes designed to improve the diets of children (Wardle *et al.* 2003) and behaviour at school (Rogers *et al.* 2008). Recent work has also shown that improving parent-carer engagement with the child's school leads to improved relationships at home and greater parent confidence with the child.

Whilst parent-carer involvement can improve the effectiveness of programmes for the child, it may also produce outcomes for parent-carers themselves. Parent-carer participation in early intervention work for children with Autistic Spectrum Disorder, for example, has been shown to lower stress levels for the parent-carer, as well as leading to

them becoming better informed about their child's condition (McConachie and Diggie 2007). Furthermore, the connection between treatment costs and the parent-carer's experience of trying to access treatment for their autistic child, and thus their perceptions of the relevant services, has been highlighted by Jacobson and Mulick (2000). There is also a substantial body of literature that highlights the importance of including parent-carer perceptions and perspectives in service delivery. A large part of this literature is derived from studies conducted in the health agency settings. Assessments of the risks of mental health problems in the child, for instance, can improve the accuracy of early detection and, as result, lead to significant cost-benefits (Dwyer *et al.* 2006). Group work with parent-carers has also been shown to improve the long-term management of childhood asthma (Hederos *et al.* 2005; Clark *et al.* 2002). Another study has found that where parent-carer perspectives are properly taken account of, then a more integrated service can be achieved between agencies based upon improved communications (Smith and Daughtrey 2000).

Positive outcomes for various aspects of community relations also appear to flow from parent-carer involvement in services. One recent study looked at a programme that revolved around a 'parenting newsletter' that provided information relating to the different stages of a child's life. This UK initiative was based on a similar programme in the US. The newsletter became highly valued by parents and was reported as being a more valuable source of information than even family and friends (Waterston and Welsh 2007). The longer term effects of parent-carer involvement has also been an area of interest for research. In a follow-up study of the Community Mothers programme in Ireland, the work of 'volunteer mothers' in disadvantaged areas was evaluated for its impact after seven years. This study showed that the programme was still having positive effects in the areas of: child accident rates; library visits; feelings about being a mother and of parental pride; parent-carer attention to homework; attitudes to physical punishment and completion rates for child immunisation (Johnson *et al.* 2000). Parent-carer involvement in Sure Start projects has also been shown to improve parenting skills and overall confidence in ways that were likely to be beneficial for the parent-carer and child alike in the longer term (Boot and Macdonald 2006).

Finally, the Chicago Longitudinal Study, significant for its large scale in terms of numbers of children included, long time frame, statistical rigour and comprehensiveness with regard to educational outcomes,

#### 4 Cost benefit analysis and small scale service intervention involving parents and babies: the Liverpool Baby Matterz initiative as a pilot case study

produced strong evidence that parent-carer involvement in early interventions do indeed produce lasting effects for later school competence. Reporting after thirteen years from the commencement of the interventions under study, researchers revealed that the element of parent-carer participation was, according to teacher-ratings, strongly associated with improved reading ability, lower rates of keeping back pupils ('grade retention') and a reduced need for special education placements (Miedel and Reynolds 1999; Reynolds *et al.* 2002).

### **Models of cost-benefit analysis**

Whilst acknowledging the numerous ways in which a wealth of qualitative and quantitative studies have demonstrated the links between parenting - parent characteristics (employment status, paternal income, educational level *etc.*) and parent behaviour (disciplining styles, communication, home learning environment *etc.*) - and educational and social outcomes for the child, the London Economics report also highlights the paucity of studies that consider the economic cost-benefits of interventions involving parents. Nonetheless, the authors produce a useful typology of the cost-benefit studies revealed across their selection of 144 articles. This is organised into a four tier classification:

***Tier 1*** - Qualitative identification of (main) costs and benefits only (e.g. increased participation)

***Tier 2*** - Quantitative assessment of benefits using subjective outcome measures (e.g. behavioural scales) or using less rigorous methodologies

***Tier 3*** - Robust non-monetary quantification, of main costs and/or benefits (e.g. 4% increase in the likelihood of children aged 16 staying on in full time education)

***Tier 4*** - Monetary quantification of (main) costs and benefits where possible (e.g. 20,000 more young people staying on in full-time education, where lifetime benefit of staying on is £100,000 per person set against the total policy or initiative costs of £200m). (London Economics p. 6)

We will return to this classification in the next section.

As alluded to above, the authors make a distinction between parent characteristics and parent behaviour. They see in this a source of complexity in attributing cause and effect for intervention outcomes. This is because many factors in each category are endogenous to the parent, raising the problem of causal factors operating that are not recognised or apparent within programmes that focus on one factor in isolation from others. For example parents on low incomes may also live in households with higher levels of relationship strain or have fewer qualifications. Moreover, factors connected to parent characteristics and those connected with parent behaviour will also interact with one another. Long working hours for the parent, for instance, may also mean that they have less time and energy to spend helping children with their homework. As the authors are keen to emphasise, these complexities raise serious issues for questions of attribution with evaluations of parent involvement in services as well as difficulties for cost-benefit analyses.

The authors of the London Economics report organise interventions involving parents into three categories, according to whether they are designed to achieve and impact upon:

Family income;

Parental involvement; or

Parental behaviour (split into home visits and parent training).

Of these it is 'parental involvement' that is of most interest for the purposes of this paper. Whilst the Baby Matterz project can be considered as multi-focused in terms of its hoped-for outcomes, there is no suggestion, in the short term at least, that parent income will be affected. Parent behaviour, though this may be one area where Baby Matterz has some impact, is not formalised in terms of home visits or parent training and so, again, will not be fore-grounded in this discussion of models of cost-benefit analysis. It is in the area of the effects of parental involvement in a service then, that the models of cost-benefit analysis identified by these authors will be considered.

The authors of the survey give five examples of evaluations of parental involvement interventions, with some assessment of the cost-benefit issues related to each. These are referred to here in a summarised form.

**The Peers Early Education Partnership.** This is a birth to five, Oxfordshire based initiative, involving group work with parents and home visits by nurses. Benefits were in the areas of child cognitive development and improvements in care-giving and parent-child interaction.

**Family Learning.** These are UK based schemes that aim to bring family members together for improved literacy and numeracy. A lasting improvement effect was apparent for children's literacy skills. One evaluation showed that nearly half of the participating parents felt that the scheme had led to them being more involved with their child. Improvements in school performance and child behaviour were also noted.

**Bookstart.** Bookstart in the UK aims to improve literacy and parent-child interaction by providing books free when the child is 7-9 months old. Non-rigorous evaluations have indicated improvements in later attitudes to reading, teacher assessments of ability and test scores at Key Stage 1.

**Parent-Child Home Programme.** This US based programme worked through home visits by volunteers and aimed to boost the quality of verbal interaction between the parent-carer and the child through reading and play activities. Long term evaluation demonstrated positive outcomes for graduation rates against the control group.

**Home Instruction for Parents of Pre-school Youngsters.** Now operating in many countries around the world this programme seeks to improve the child's readiness for school. It focuses upon the home as a learning environment, parent-child interaction and the skills of the parent-carer in supporting learning. Evaluations have highlighted beneficial effects in the areas of school suspension rates, classroom behaviour and test scores.

In their discussion of the cost-benefit analyses of these programmes, the authors again stress that few studies have been conducted that can be considered as robust in having measured in-put against out-put

monetised cost savings. In fact of the list given above, just two have been subject to this kind of analysis. Key to the economic analyses that have been carried out however, has been a careful mapping of the intended or feasible outcomes of the intervention. For the purposes of the evaluations mentioned in this section, the following have been important: crime reduction; lower substance abuse; reduced teen-aged suicides; reduced child abuse or neglect; reduced domestic violence. The authors caution that the listing of social costs for these areas of intervention can be misleading in the selection of some factors over others, and in the exclusion of certain benefits due to difficulties of monetisation. Nonetheless, such a mapping exercise is essential to any cost-benefit analysis. Once done however, benefits can indeed be measured against the investment costs required.

### **The arithmetic of cost-benefit analysis**

For the purposes of developing a cost-benefit model for Baby Matterz all four of the tiers identified in the classification offered by the London Economics survey referred to earlier, can be applied.

***Tier 1*** can easily be applied through a simple 'before and after implementation' comparison of the effects of Baby Matterz in terms of parent participation, child welfare and pupil engagement. Such a model would need to draw heavily on professional opinion and judgement as to the value-added outcomes generated and the total investment involved.

***Tier 2*** can be applied through the use of a range of assessment scales used by various professional groups. An obvious example in connection with Baby Matterz would be the teacher assessment scales used by teachers for pupil attainment. A plausible approach here would be to base cost-benefit analysis upon scaled teacher-assessments across selected curriculum areas over the course of a Baby Matterz school year for comparison with previous, non-Baby Matterz years. The input costs of Baby Matterz could then be evaluated against any changes in performance.

***Tier 3*** can be applied through a careful mapping of feasible outcomes in relation to services. Available data on accessing services, for instance, could be scrutinised for any changes that occur whilst the Baby Matterz programme is running in an area. If, for example, by being involved in Baby Matterz, parents are more likely to access the

services available to them, then this ought to show in the data collected by the relevant agencies. The usual issues to do with attributing cause and effect will be present, and interpretation of correlations would be necessary. Nonetheless an effect, if it is real, should be apparent, and so allow for an impact assessment of the overall investment in Baby Matterz.

**Tier 4** represents the most relevant of the four classifications in terms of executive budget management, and so will form the focus of the substantive part of this section. Assuming that the relevant financial data is both available and accessible, it should be possible to construct a reliable cost-benefit model for Baby Matterz. The crucial requirement for this kind of analysis is an accurate mapping of the relevant agency costs in relation to the feasible outcomes of the Baby Matterz programme.

First, however, we will consider the algebra of cost-benefit analysis as it might be developed for Baby Matterz. Adapting a basic formula, using notation derived from 'human capital theory', provides a simple starting point for the developing of a working model for cost-benefit analysis (Allee 2000):

$$V_C = \frac{\sum_{j=1}^{j=n} S_j}{C}$$

Where:

**V<sub>C</sub>** = the value created for any stakeholder (e.g. local authority) across the whole life-cycle (or part) of a programme.

**S<sub>j</sub>** = satisfaction (measured as an input variable 'j') in terms of tangible (and intangible) benefits.

**C** = the cost of the programme over its whole life-cycle (or part).

Translating this into terms that relate to Baby Matterz we can adapt this formula as follows:

$V_C$  = the value ratio of costs to savings to education and/or health agencies produced by the Baby Matterz programme over its life-cycle (or part).

$C_{BM}$  = the implementation and running costs of Baby Matterz.

$S_{BM}$  = savings accrued as a result of the programme.

'j' = categories of budgetary expenditure over and above normal social entitlement for the child.

Our Baby Matterz formula now appears as:

$$V_C = \frac{\sum_{j=1}^{j=n} S_{BM}}{C_{BM}}$$

### **Cost-benefit analysis of Baby Matterz**

Using relevant and Liverpool-specific data we can now proceed to a consideration of what cost-benefits might indeed flow from the Baby Matterz initiative, in the areas of educational and health outcomes. These two service-related areas will be looked at separately.

#### Education

For a consideration of education outcomes it is necessary to first map out some feasible scenarios for the ways in which Baby Matterz can contribute to positive outcomes for pupils. The professionals who are a part of the ongoing work around Baby Matterz, and who have been

10 Cost benefit analysis and small scale service intervention involving parents and babies: the Liverpool Baby Matterz initiative as a pilot case study

interviewed as part of the research that informs this paper, agree that the project is beneficial for pupils in the area of the Personal, Social and Emotional Education curriculum (PSHE). Pupils are said to, on the whole, respond well to the presence of a baby in class and, as they get to know 'their' Baby Matterz baby, come to identify with it, looking forward to its visits with the parent and, as a result, grow in their caring and affective capacities. It is feasible then, that the outcomes and effects of Baby Matterz may lie in the areas of reduced need for behavioural and emotional support, and of reduced risks of exclusion.

Caution is required here. No strong claim can, as yet, be made for Baby Matterz in terms of any proven effect. The areas of feasible benefit mentioned here are also hugely complex with regard to causal factors, and no one intervention can be expected to change the situation for the pupils affected in any simple or immediate manner. For the purposes of the cost-benefit considerations that follow, it also needs to be understood that the budget allocations for such areas as special educational needs or educational psychology, cover a wide range of areas of need, many of which will lie far beyond any expected, feasible or even potential effect produced by Baby Matterz. This said, it remains reasonable to conjecture, where positive assessments of Baby Matterz are forthcoming from classroom teachers, that there may indeed be benefits that result for pupils in some aspects of these areas of need. If benefits in PSHE-related areas are taken as representing a plausible scenario then, and taking an aggregate view across the education service in Liverpool, we can use the available budget allocations for the city's school service to provide a rough guide to what sorts of savings might accrue from the project.

Given the notes of caution above regarding the complexity of the areas of need in which we have identified feasible outcomes for Baby Matterz, the assumed effect for pupils will be set low. We will, for the sake of argument, assume a 10% effect in the areas of feasible benefit that have been given. Whether this is taken to mean a reduction in the numbers of children requiring support over and above their normal educational entitlement, or of the pressures and demands on the service in other ways, this proportional saving will be used to calculate the likely saving in direct monetary terms as well as the cost-benefit ratio ( $V_C$ ).

The tables on the following pages are based upon budgetary data for all school types<sup>1</sup>, drawn from the 2007/08 Education Budget Statement (Section 52) for Liverpool Children's Services. The data has been selected according to the provisions that can be considered as covering the feasible potential benefits of Baby Matterz. These figures are then re-calculated to give an averaged cost for seven schools. A figure of seven schools is chosen in order to match the available figures for the costs of Baby Matterz. These are given here:

*Discount Network Rates<sup>2</sup> – based upon 1 secondary school & 6 primary schools and a total of 16 accredited staff*

The expenditure for the a Connect + site licence for seven schools over three years (£40,500) can now be assessed against the potential gains to the service as follows:

	<i>Connect<sup>3</sup> version</i>	<i>Connect + single user</i>	<i>Connect + site licence</i>
<i>Year 1</i>	<i>£18,500.00</i>	<i>£19,500.00</i>	<i>£20,500.00</i>
<i>Year 2</i>	<i>£10,000.00</i>	<i>£10,000.00</i>	<i>£10,000.00</i>
<i>Year 3</i>	<i>£10,000.00</i>	<i>£10,000.00</i>	<i>£10,000.00</i>

<sup>1</sup> School types included in the budgetary breakdown are: nursery (5); primary (134); secondary (28); and special (14). There are also two academies in Liverpool but they receive their funding direct from DCSF and are not included in the local service budgetary data. This information was provided by the Financial Management Service for Liverpool City Council on 15 July 2008.

<sup>2</sup> Information provided by The Learning Partnership on 19 June 2008.

<sup>3</sup> The Baby Matterz program is housed on Mind Jet Connect – an online mind mapping system.

12 Cost benefit analysis and small scale service intervention involving parents and babies: the Liverpool Baby Matterz initiative as a pilot case study

**Education Budget Statement (Section 52)**

<b>Category</b>	<b>2007/08 allocation (for 181 schools - all categories)</b>	<b>Averaged allocation (for seven schools)</b>
<b>Schools budget</b>		
Provision for pupils with SEN (including assigned resources)	£3,446,194	£133,278
Provision for pupils with SEN (including non-assigned resources)	£1,773,803	£68,600
Support for inclusion	£96,067	£3,715
Pupil referral units	£1,755,757	£67,902
Behaviour support services	£1,282,271	£49,591
<i>Total</i>	<i>£8,354,092</i>	<i>£323,086</i>
<b>Special Education</b>		
Educational psychology service	£576,062	£22,279
SEN administration, assessment and coordination	£51,315	£1,985
Monitoring SEN provision	£51,315	£1,985
<i>Total</i>	<i>£678,692</i>	<i>£26,248</i>
<b>Access</b>		
Behaviour support plans	£69,594	£2,691
Education welfare service	£1,752,930	£67,793
<i>Total</i>	<i>£1,822,524</i>	<i>£70,484</i>
<b>Total costs to Children's Services</b>	<b>£10,855,308</b>	<b>£419,819</b>

*Cost-benefit calculations*

Category	Notional monetary saving for seven schools (one year)	Notional monetary saving for seven schools (three years)
<b>Cost savings to schools budget</b> assuming a 10% Baby Matterz effect for seven schools		
Provision for pupils with SEN (including assigned resources)	£13,328	£39,983
Provision for pupils with SEN (including non-assigned resources)	£6,860	£20,580
Support for inclusion	£372	£1,115
Pupil referral units	£6,790	£20,370
Behaviour Support Services	£4,959	£14,877
<i>Total</i>	<i>£32,309</i>	<i>£96,926</i>
<b>Cost savings to Special Education</b> assuming a 10% Baby Matterz effect for seven schools		
Educational psychology service	£2,228	£6,684
SEN administration, assessment and coordination	£198	£595
Monitoring SEN provision	£198	£595
<i>Total</i>	<i>£2,652</i>	<i>£7,874</i>
<b>Cost savings for access</b> assuming a 10% Baby Matterz effect for seven schools		
Behaviour support plans	£269	£807
Education welfare service	£6,779	£20,338
<i>Total</i>	<i>£7,048</i>	<i>£21,145</i>
<b>Total cost savings for seven schools</b>	<b>£41,982</b>	<b>£125,946</b>
$\sum_{j=1}^{j=n} S$		

14 Cost benefit analysis and small scale service intervention involving parents and babies: the Liverpool Baby Matterz initiative as a pilot case study

Using this notional estimate of a cost benefit saving to the service for seven schools over three years ( $S_{BM}$ ), and given a cost of £40,500 for baby Matterz (including training and software license for seven schools over three years ( $C_{BM}$ ), we may now return to our formula

$$V_C = \frac{\sum_{j=1}^{j=n} S_{BM}}{C_{BM}}$$

to arrive at an estimate of the cost-benefit ratio to the service of this small scale application of Baby Matterz, premised upon a 10% effect.

$$\text{So, } V_C = \frac{\pounds 125,946}{\pounds 40,500} = 3.1$$

In other words for every £1 spent on Baby Matterz in this scenario, £3.10 would be saved by the service.

Although a  $V_C$  value of 1:3.1 is impressive for a scenario premised upon a 10% effect, the plausibility of the scenario itself can be called into question. There is reason to argue however, that the real impact of Baby Matterz may prove to be better than this. This speculation is based upon three considerations.

The first is that teacher assessments of Baby Matterz have been very positive indeed and suggest that we may be justified in going further than simply acknowledging a feasible benefit in areas connected to PSHE. Classroom teachers and the professionals who have been supporting Baby Matterz sessions, as well as the parents involved in the programme, actually report an ‘amazing’ effect on pupil behaviour

in the presence of the baby. Pupils are described as becoming highly attentive to the baby's every movement and gesture, and to show great care and regard towards it. Some teachers also report an effect over time, as pupils look forward to the baby's visits and then reflect upon each session after it has happened.<sup>4</sup>

Secondly, it should be noted that the use of aggregate data for the notional calculations given above has a mathematical 'averaging down' effect. This is simply to do with the fact that the expenditure for different budgetary categories will not in fact be evenly spread across schools in the city, but rather, will vary according to the needs of an area and its current cohort of school-aged children. This means that, where Baby Matterz is introduced into schools on the basis of assessments of need in the areas of educational welfare, special educational needs or behavioural support, the costs are likely to be higher than aggregated data would suggest, and the cost-benefit ratios achieved through successful intervention are therefore also likely to be greater.

Thirdly, a similar point applies in terms of the different categories of school. Again, the use of aggregate data for all types of school for reasons of brevity and analytical simplicity is distorting. In reality of course, allocations will not be evenly apportioned across special schools, non-special schools and out-of-school provision. The simplification involved here, however, is one that favours an optimistic assessment of the cost-benefit potential of Baby Matterz, and for the same reasons as were given above with respect to school social-demographic profile.

The estimate given here for cost-benefits then, is a conservative one. With the consistent application of the Baby Matterz programme, in schools targeted according to need and type, and with proper professional support, it seems likely that the savings in the longer term resulting from the initiative, may indeed be greater than those suggested by these figures. Moreover, as Baby Matterz became embedded it would be likely that, as start-up costs became historical, year-on-year costs would settle and become stable, and that cost-benefits would improve accordingly. This may be all the more true if 'whole-school' effects are taken into account, in a situation in which more than one Baby Matterz programme - with their own parent, baby,

<sup>4</sup> These observations are based upon reports given by classroom teachers at a research focus group session held on 2 July 2008, by Baby Matterz parents at three research focus group sessions held on 27 February 2008, 9 April 2008 and 11 June 2008, and from numerous informal discussions with the professionals involved.

pupil groups and accredited teacher - are involved in the school.

### Health

The data for health-related potential outcomes resulting from Baby Matterz, that was available for this research, was not as detailed as that for education. This meant that the scope for any attempt at plausible scenarios was far more limited. Nonetheless, information from the Information Analysis Team at the Liverpool Primary Care Trust (PCT) did provide some foundation for speculation. Baby Matterz can be seen as having a potentially educative effect for the parents involved. Areas in which benefits for the infant might result then, include: greater awareness of, and preparedness to use local services; awareness of the importance of the completion of immunisation programmes; and the parental ability in identifying problems or delays in speech and motor development.

Some financial data was available relating to areas of potential benefit, and so these can be briefly considered here. It may be, for instance, that where parents are more aware of, and more likely to use, their GPs or the Liverpool Smithdown Children's Walk In Centre, that there may consequently be a reduction in otherwise avoidable attendances at accident and emergency (A & E) hospital units. Three types of attendance are tariffed as follows: High Cost - £102; Standard - £75; Minor - £56. The professional opinion given was that most attendances would be charged at the Standard rate, indicating that £75 would be saved to the service with each attendance avoided. It is also the case that where a child is brought to A & E, they are more likely to be admitted, bringing greater charges to bear. When the child is seen instead by a GP or Specialist Nurse Practitioner, they are far more likely to be managed without admission. A plausible scenario was offered by a member of the PCT's Information Analysis Team:

*A child is pyrexial (in fever) and the mother, on the GP's advice is able to manage this at home, avoiding the child's temperature reaching a level that causes the febrile convulsion (fitting) [that affects 1 in 20 children].*

In this scenario a non-elective (emergency) admission has been avoided. The cost of such an admission would be £619 to which a 90% children's top-up applies. The minimum saving then, resulting from informed parent action in this scenario, is £1,176.

Immunisation represents an area of health agency concern in which significant outcomes could be achieved through greater parental awareness. Where the parent is well informed about immunisation programme timescales, then the importance of this for the infant in terms of better long term health is obvious. The cost-benefit will depend on the epidemiology of the specific infection and its treatment in the event of its occurrence in the individual. There is a greater significance to the completion of immunisation programmes within the correct medical timescales however, in that the effects of non-immunisation will be felt at the level of the wider population. Information from the Health Protection Agency indicates that for a wide range of infection types, coverage rates need to reach 95% in order to achieve 'herd immunity'. The cost-benefits here cannot meaningfully be calculated specifically for Baby Matterz. Nonetheless, insofar as it is a programme that brings with it the potential for improved parental knowledge of health issues for the baby, as well as better service-engagement, then Baby Matterz can be seen as making a contribution to the array of initiatives and efforts in the area of health promotion and preventative medicine.

## **Discussion and conclusion**

This paper has sketched out a much simplified scenario premised upon a 10% effect on the costs to services in the areas of the social and educational needs of pupils, and has hinted at some of the kinds of savings that might be achieved for health services. Even on a modest estimate of the feasible benefits of Baby Matterz in the areas of pupil behaviour, emotional well-being and possibly also, motivation for learning, it seems likely that savings would be achieved. A comprehensive cost-benefit analysis of the real effects of Baby Matterz for education and health budgets would need to be a part of a much fuller evaluation. In such a costing exercise the impact of the programme within particular schools would need to be assessed through a scrutiny and analysis of the detail of different strands of school and Children's Services spending over time. Moreover, this kind of study would need to be conducted with a focus on Baby Matterz pupil groups in order to allow meaningful comparisons to be made with previous year groups and/or with comparable pupil groups not engaged with Baby Matterz. At a different scale of analysis 'whole school' effects could be assessed, particularly in schools in which more than one Baby Matterz group was running.

Irrespective of financial calculations, and in the assessments provided by classroom teachers, by supporting professionals and by parents, Baby Matterz is a hugely worthwhile initiative that deserves to be supported by agencies. Indeed, with respect to considerations of the service cost-savings that may be achieved through Baby Matterz, it is worth highlighting, in our final reflections, the ethical implications of coming to rely on Baby Matterz as any kind of *replacement* of existing provision in its areas of feasible benefit. It should never be forgotten after all that at the heart of Baby Matterz there must always be a baby and a parent who are enjoying the experience of being involved. Naturally, a baby should never be seen as an allocated resource. Equally, a parent who comes to rely on Baby Matterz in any sense at all, is a parent for whom the boundaries between the public realm of services and the private realm of family life have become blurred.

This said, where any initiative is able to reduce pressures upon a service as well as (more importantly) contributing positive outcomes for pupils, parents and professionals, then this is all to the good. The discussion in this paper has attempted to offer plausible and (hopefully) convincing scenarios pointing to the kinds of savings that might result from the implementation of Baby Matterz in schools, and possibly other service settings. Based upon the testimony of parents and professionals, Baby Matterz has already made a difference in the schools that have run it during the school year 2007/8. It has certainly been enjoyed on the whole by those involved, even if its impact has yet to be evaluated. Yet the indications are that it will prove to be of real worth on many more levels than this.

In the experience of those who have had the most 'hands-on' involvement in Baby Matterz, it is a powerful initiative. Indeed the accounts given by research participants during the course of the research informing this paper, have been impressive for what they have conveyed of the potential for reaching and connecting with pupils in the classroom, and in drawing out very positive affective values of caring, concern for others and social responsibility even in children who are regarded as 'challenging' in various ways. This has been all the more impressive given the pilot status of Baby Matterz in Liverpool during the school year 2007/8. As the model underpinning the programme becomes both more embedded and refined, we can expect this potential, if indeed it is real, to prove its value to the services supporting it. As it does so, the cost-benefits that have been speculated upon in this necessarily tentative discussion, will become more meaningful and more real.

The 'costs' of Baby Matterz are, of course, in part, financial as they are of any service intervention. If effective, the 'benefits' will be financial too. The true costs, however, would be those of not exploring the potential of what thus far appears to be an important innovation in the thinking that informs professional practice within Children's Services. In this sense they would be the social and educational costs to the pupils who would miss out on what Baby Matterz has to offer. If the professional judgements that have been offered during the course of the research behind this report prove to be correct then, the beneficiaries in our 'cost-benefit assessments', will ultimately be the children whose lives will be improved.



## References

- Allee, V. (2000), 'The value evolution: addressing larger implications of an intellectual capital and intangibles perspective', *Journal of Intellectual Capital*, Vol. 1 (1), pp. 215-221.
- Birdthistle, N., Hynes, B. and Fleming, P. (2007), 'Enterprise Education Programmes in Secondary Schools in Ireland: A multi-stakeholder perspective', *Education and Training*, Vol. 49 (4), pp. 265-276.
- Boot, A. and Macdonald, G. (2006), 'Parents and Sure Start Evaluation: Suggestions for partnership', *Child Care in Practice*, Vol. 12 (3), pp.269-281.
- Clark, N., Brown, R., Joseph, C., Anderson, E., Liu, M., Valario, M. and Gong, M. (2002), 'Issues in identifying asthma and estimating prevalence in an urban school population', *Journal of Clinical Epidemiology*, Vol. 55 (9), pp. 870-881.
- Dockins, C., Jenkins, R., Owens, N., Simon, N. and Wiggins, L. (2002), 'Valuation of Childhood Risk Reduction: The importance of age, risk preferences and perspective', *Risk Analysis*, Vol. 22 (2), pp. 335-346.
- Dwyer, S., Nicholson, J. and Battistutta, D. (2006), 'Parent and teacher Identification of Children at Risk of Developing Internalising or Externalising Mental Health Problems: A Comparison of Screening Methods', *Prevention Science*, Vol. 7 (4), pp. 343-357.
- Hederos, C., Janson, S. and Hedlin, G. (2005), 'Group discussions with parents have long-term positive effects on the management of asthma with good cost-benefit', *Acta Paediatrica*, Vol. 94 (5), pp. 602-608.
- Jacobson, J. and Mulick, J. (2000), 'System and Cost research Issues in Treatments for People with Autistic Disorders', *Journal of Autism and Development Disorders*, Vol. 30 (6), pp. 585-593.
- Johnson, Z., Molloy, B., Scallon, E., Fitzpatrick, P., Rooney, B., Keegan, T. and Byrne, P. (2000), 'Community Mothers programme – seven year follow-up of a randomised controlled trial of non-professional intervention in parenting', *Journal of Public Health Medicine*, Vol. 22 (3), pp. 337-342.

London Economics (2007), *Cost Benefit Analysis of Interventions With Parents*, Research Report DCSF-RW008.

McConachie, H. and Diggle, T. (2007), 'Parent Implemented Early Intervention for Young People with Autism Spectrum Disorder: A systematic review', *Journal of Clinical Practice*, Vol. 13 (1), pp. 120-129.

Miedel, W. and Reynolds, A. (1999), 'Parent Involvement in Early Intervention for Disadvantaged Children – Does It Matter?', *Journal of School Psychology*, Vol. 37 (4), pp. 379-402.

Orchard, L. (2007), 'Evaluating Parenting Classes Held at a Secondary School', *Research in Post-Compulsory Education*, Vol. 12 (1), pp. 91-105.

Reynolds, A., Temple, J., Robertson, D. and Mann E. (2002) 'Age 21 cost-benefit analysis of the Title I Chicago Child-Parent Centers' *Educational Evaluation and Policy Analysis* 2002, Vol. 24 (4), pp. 267-303.

Rogers, L., Hallam, S. and Shaw, J. (2008), 'do generalist Parenting programmes Improve Children's Behaviour and Attendance at School? The Parents' Perspective', *British Journal of Special Education*, Vol. 35 (1), pp. 16-25.

Secret, L., Lassiter, S., Armistead, L. Cwyckoff, S., Johnson, J., Williams, W. and Kotchick, B. (2004), 'The Parents matter! Program: Building a successful investigator-community partnership', *Journal of Child and Family Studies*, Vol. 13 (1), pp. 35-45.

Smith, L. and Daughtrey, H. (2000), 'Weaving the seamless web of care: An analysis of parents' perceptions of their needs following discharge of their child from hospital', *Journal of Advanced Nursing*, Vol. 31 (4), pp. 812-820.

Smith, S. and Randhawa, G. (2006), 'Embracing Diversity in Community Healthcare settings: Developing a client-centred approach to weaning support', *Diversity in Health and Social Care*, Volume 3 (1), pp. 47-53.

Trudgeon, C. and Carr, D. (2007), 'The Impacts of Home-Based Early Behavioural Intervention programmes on Families of Children with Autism', *Journal of applied research in Intellectual Disabilities*, Vol. 20 (4), pp. 285-296.

Wardle, J., Cooke, L., Gibson, E., Sapochnik, M., Sheiham, A. and Lawson, M. (2003), 'Increasing Children's Acceptance of Vegetables: A randomised trial of parent-led exposure', *Appetite*, Vol. 40 (2), pp. 155-162.

Waterston, T. and Welsh, B. (2007), 'What Are the Benefits of a Parenting Newsletter?' *Community Practitioner*, Vol. 80 (8), pp. 32-35.

White, T. (2008), 'Healthy practices: an analysis of community benefit measurement and reporting in non-profit hospitals'. (Unpublished thesis. Boston College, Carroll School of Management).









The Liverpool Baby Matterz initiative brings parents and their babies into schools to talk to pupils about aspects of their growth, development, care and welfare. Positive professional assessments of Baby Matterz have been forthcoming and there is a growing sense of optimism about what the project has to offer in terms of the social and emotional development of pupils. There is also the hope that the initiative may, by being effective in these areas, reduce the need of emotional and behavioural support for some pupils. If this hope is realised then budgetary savings may follow, allowing existing funds to be re-directed. This paper is an exercise in cost-benefit modelling for Baby Matterz. It looks at the kinds of saving that might be achieved through a consideration of the feasible benefits of Baby Matterz, and relates these to the budgetary allocations for the relevant areas of need within services. In-so-doing it seeks to provide the basis for any, more thoroughgoing, cost-benefit analysis that may be incorporated into a future impact evaluation of the initiative.

Educational Development Division,  
Centre for Lifelong Learning,  
University of Liverpool,  
128 Mount Pleasant,  
Liverpool, L69 3GW.

\* Trademarked as *Baby Matterz* for The Learning Partnership and The Innovation Unit.