



Public Health
England

Best Start in Life

Workshop series to support prioritisation
of research

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. It does this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. PHE is an operationally autonomous executive agency of the Department of Health.

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Summary of the main research priorities identified

The following are the key research priorities identified during the discussion:

- early years map, analogous to the Foresight obesity map, to be constructed, allowing visualisation of the many sectors that need to become active to feed into changes ensuring every child has the best start in life
- synthesis of existing evidence across the early years to identify research gaps
- further use of international comparisons, particularly in areas that are difficult to research
- further development of the MRC Complex Interventions Framework, applying it within the early years public health context
- systems and network research to identify potential lessons from the improvements in adult chronic disease that could be applied in the early years setting in thinking about how to build evidence and the infrastructure necessary to conduct research in different contexts
- work to realise the research opportunities using the Maternity and Children's Data Set
- further research on most effective interventions to tackle negative impact of poverty on children's outcomes: to reduce the numbers in poverty and/or to ameliorate the effects of poverty
- research across early years and housing to understand the role of housing quality on children's development
- research is needed on how the new education, health and care plans are being implemented and to evaluate what effect the programme is having on children's outcomes
- research is needed to understand how the next generation of new parents will be using apps and what can be learned from that use
- there are unanswered questions about data collection from apps for research and how representative this data would be, as well as whether this approach works from the perspective of positive health outcomes
- research on data collection via apps in different ethnic groupings and other sections of the population to examine issues such as differences in people's interpretations of the questions being asked
- research required on building social capital among parents and in their communities, and the benefits that can be delivered
- further research is needed to understand the impact of increased investment in early years between 1997 and 2010 and why significant impact has not been seen in evaluations to date

- development of methodological approaches including:
 - methodologies to better measure impact of long term interventions
 - methodologies for early determination of whether an intervention is working effectively
 - understanding of how long outcomes should be measured to reach a conclusion on the impact of an intervention
- development of a sound conceptual model to enable analysis of multiple interventions which together could lead to a positive outcome
- research on how to tailor interventions in individual, more challenging situations
- which intervention(s) within a range of options work best in different situations and why, to allow a more targeted approach enabling more families to be reached
- further research on the 'tail' – those individuals/families where an otherwise successful intervention has not worked and why
- comparative research where local authorities adopt different strategies across the early years
- evaluation of the role of health visitors and how that could be strengthened
- further research in this area would be helpful to determine what an absolute threshold for being ready for school would be, as opposed to the current more relativistic framework
- investigation of the reasons behind differences in attainment for children on free school meals in different areas including differences in service provision in the different areas

Key overarching issues

Definition/framework

For the purposes of this workshop, it was agreed that 'best start in life' should cover the period from pregnancy up to age five. This is the vital period for intervention as it is known to be very difficult to reverse negative patterns once children reach school age.

In public health, it is common to focus on individual risk factors but it was agreed that for early years, it is important to consider a more holistic view taking the child in the family within their community and local area, and to ensure a person-centred approach to providing services and interventions. Given the complex and overlapping systems at play in this period, it can be difficult to get traction on the most important issues.

Data

The health visiting service is now using the Ages and Stages Questionnaires (ASQ) to assess child development and data from the universal check at age 2.5 will form part of the Maternity and Children's Dataset held at the Health and Social Care Information Centre.

There is a need for reliable and accessible data that can be linked to other information to allow multidimensional use. Investment in enabling infrastructure to allow this level of data use in the long-term is required and would facilitate a step change in research possibilities.

A number of issues around current data capture and use were identified including:

- the need to develop better infrastructure to ensure a systematic approach to capturing the outcomes of interest for research
- there is low motivation to record data purely for research purposes compared with recording data relevant to the care of a child meaning that outcomes data is often missing
- Differences in data availability between high risk families and the whole population. Outside a hospital setting, there is a lack of robust routine data flows on services delivered to children, their background information and outcomes
- data linkage across multiple sectors is needed to research effectively across the lifecourse, including health, education, housing and social care. This level of detail can be captured in cohort studies, but it would be beneficial to embed some of this in routine service
- much data is currently captured in paper form such as the personal child health record (or red book). Extracting the information from paper is costly, in terms of finance and time. Appropriate IT systems could be developed to record data electronically
- digital technology allows for more creative approaches to data, such as including photography in epidemiological data collection to provide a more detailed electronic resource
- the whole area of data in health and education is likely to undergo substantial and rapid change in the future due to disruptive innovations in technology and investments in data linkage including through the new ESRC administrative data research centres
- reduction to collection of minimal data sets to save resources is massively detrimental to the research base

Introduction and overview

During financial year 2014/15 PHE ran a series of four workshops, culminating in five reports, on the topic areas below to specifically explore the research needs and evidence gaps for those topics:

- Obesity 9 September 2014
- Dementia 26 August 2014
- Best Start in Life 25 November 2014
- Cross-cutting themes (report only)
- Evaluation 11 February 2015

This is the report for Best Start in Life, there is also a report detailing items that were discussed at more than one workshop. The aim of these workshops was to engage with the academic, policy, research funding and public health communities to explore research requirements in topic-specific, PHE priority areas. The discussion aimed to identify current major research challenges and gaps relevant to Best Start in Life. This addresses the 'public health research narrative' as proposed in the PHE Research, Development and Innovation strategy 'Doing, Supporting and Using Public Health Research'.

This is a summary report to reflect the views expressed at the workshop.

Intended audience of this report

The intended audience for this report includes all those involved in the research process for early years related research including academics and other researchers, research councils, health research charities, other research funders and commissioners.

About the workshop

Among the 26 participants were senior members of many of the most prestigious national early years related academic research groups (see Annex 1 for full participant list). Their engagement with PHE priorities is an excellent indication of future potential collaboration.

The workshop was split into three sections:

1. Two short presentations giving an overview of PHE R&D strategy, PHE ambitions and structures, and a presentation by the PHE Healthy People lead
2. An open discussion and plenary
3. Group sessions where participants were split into four groups to address a set of specific questions related to early years research needs

Findings

Discussion topic	Principal views expressed	Suggestions for future research
Mapping the research landscape	<ul style="list-style-type: none"> The Foresight obesity map was extremely influential in highlighting the complexity of the multiple causes of obesity, demonstrating the range of interlinking factors in biology, environment, behaviour etc that were influencing people's weight. It was agreed that a similar level of mapping for early years could potentially be similarly influential. 	<ul style="list-style-type: none"> Early years map, analogous to the Foresight obesity map, to be constructed, allowing visualisation of the many sectors that need to become active to feed into changes ensuring every child has the best start in life.
Establishing a strong research base	<ul style="list-style-type: none"> Basic research on key scientific, biological and psychological questions is vital alongside implementation science to understand the context within which an intervention is designed, implemented and evaluated and to understand who an issue affects and why. More work could be done using international comparisons, particularly in areas that are otherwise too difficult to research in the current climate such as the health impacts of increases to absolute or relative income. 	<ul style="list-style-type: none"> Synthesis of existing evidence across the early years to identify research gaps. Further research to expand basic science knowledge around long-term outcomes. Further use of international comparisons, particularly in areas that are difficult to research.
Building a comprehensive research framework for interventions	<ul style="list-style-type: none"> Further development of the MRC Complex Interventions Framework, applying it within the early years public health context, would be helpful. There are numerous potential outcomes each requiring their own conceptual model to allow identification of potentially modifiable factors. There is overlap between upstream determinants relevant to a number of areas including obesity, readiness for 	<ul style="list-style-type: none"> Further development of the MRC Complex Interventions Framework, applying it within the early years public health context.

	school etc. A comprehensive framework would allow a holistic approach across a number of priority areas.	
Data needs	<ul style="list-style-type: none"> • Together with better definition of the complex pathways operating within the early years context, there is a need to access and link data across a number of domains, along with a need for further investment in the enabling data infrastructure to allow detailed research projects to take place. • Robust data and its availability have facilitated major improvements in targets in the area of adult chronic disease, including in deprived areas. Research using systems and network approaches could identify learning from these areas that could be applied in the early years setting. • It is important to ensure that data from the universal 2 year check as part of the Maternity and Children's Data Set is used to increase research opportunities on outcomes of interest and the pathways leading to them. • The health visitor review (using the Ages and Stages questionnaire) is conducted on all children at age 2 but there is also a non-universal early years assessment undertaken for those in early years educational settings. Integration of these data is challenging. Although some background socioeconomic data is collected, data on other exposures such as parents reading to children, regular bedtimes, mealtimes etc are not collected. These can potentially be captured through other 	<ul style="list-style-type: none"> • Systems and network research to identify potential lessons from the improvements in adult chronic disease that could be applied in the early years setting in thinking about how to build evidence and the infrastructure necessary to conduct research in different contexts. • Work to realise the research opportunities using the Maternity and Children's Data Set.

	mechanisms but the opportunities to link the data have not yet been explored.	
Child Poverty	<ul style="list-style-type: none"> • Austerity is playing a major role in the current outlook for children and families. The influence of child poverty overshadows the role of other exposures in the early years and the socio-economic context for children is worsening. • Within this it is important to understand where there are opportunities to improve outcomes within the first 2 years which are known to be vital in areas such as setting physical activity behaviours and feeding patterns which can lead to obesity, as well as social and emotional issues. • The observed negative impact of poor quality housing and multiple house moves on child development indicates a need for joined up research across this sector. 	<ul style="list-style-type: none"> • Further research is required on most effective interventions to tackle the negative impact of poverty on children's outcomes: to reduce the numbers of children in poverty and/or efforts to ameliorate the effects of poverty. • Research across early years and housing to understand the role of housing quality on children's development.
Special educational needs (SEN)	<ul style="list-style-type: none"> • The new education, health and care plans replace statements of SEN and learning difficulties assessments for children and young people with special educational needs. These cover the child from 0–25 years and will take a person-centred approach which might include photographs, objects etc. This means the dataset will not be uniform and it is not yet clear whether data will be electronic and whether it will be shared. • For children with special educational needs, there are different pathways to success than simply considering educational outcomes. Children's development must be supported but within the 	<ul style="list-style-type: none"> • Research is needed on how the new education, health and care plans are being implemented and to evaluate what effect the programme is having on children's outcomes within the context of their potential.

	context of their potential and understanding this is a major challenge in early intervention.	
Mobile phone technology	<ul style="list-style-type: none"> • There are an increasing number of mobile phone apps relevant to this area including the new Baby Buddy app developed by Best Beginnings, but as yet there is very little regulation or independent evaluation of this growing and potentially influential area. • With self-reported data, issues of validity and bias always need to be considered. Still apps and the technological advances they offer should be explored as new research tools. • Potential differences in data validity/bias across different ethnic groupings or other sections of the population would need further exploration so data can be interpreted across different sections of population. • It is now possible for technology to be used in in-depth, intensive studies measuring areas such as physical activity and sleep patterns and possibilities of linking this to routine data could be explored. 	<ul style="list-style-type: none"> • Research is needed to understand how the next generation of new parents will be using apps and what can be learned from that use. • There are unanswered questions about data collection from apps for research and how representative these data would be, as well as whether this approach works from the perspective of positive health outcomes. • Research on data collection via apps in different ethnic groupings and other sections of the population to examine issues such as differences in people's interpretations of the questions being asked.
Social capital	<ul style="list-style-type: none"> • Public health begins with building community capacity so it is important to optimise functional social capital and communities before adding external professional interventions. • Mothers/parents may be more likely to take advice from each other or peer groups within their communities than from professionals so it would be useful to determine how to maximise this and the 	<ul style="list-style-type: none"> • Research required on building positive social capital among parents and in their communities; and the benefits that can be delivered

	benefits derived. It is important to note that common groups may share the same, sometimes unsafe or unhelpful, advice so social capital may not always be a positive thing.	
Impact of investment	<ul style="list-style-type: none"> • 1997 to 2010 saw a tripling of government investment in early years, including increased maternity leave and pay. However, the analysis conducted to date has failed to demonstrate a significant impact and the reasons behind this are unclear. There is a need to be very careful in our presentation of these issues. In evidence terms, the return on this investment is not as high as expected but it is important to unpick the reasons behind this to ensure that early years programmes are not subject to cuts and the progress made since 1997 is not lost. • Research linking epidemiological and administrative data has suggested that children accessing high end services are not those with the highest level of need but rather the 'worried well'. This does not appear to be linked to socioeconomic status. The current model is for users in need to request services rather than professionals to screen and then offer services to those with highest needs. This model is under scrutiny. 	<ul style="list-style-type: none"> • Further research is needed to understand the impact of increased investment in early years between 1997 and 2010 and why significant impact has not been seen in evaluations to date.
Evaluation of interventions	<ul style="list-style-type: none"> • The long term nature and complexity of outcomes from early years interventions is not easily compatible with political and economic timeframes. It is clear that a long-term approach is needed to tackle the issues so to justify this a number of 	<ul style="list-style-type: none"> • Development of methodological approaches including: • methodologies to better measure impact of long term interventions • methodologies to determine

	<p>methodological approaches could be further developed.</p> <ul style="list-style-type: none"> • It is important to acknowledge that demonstrating returns on interventions may not be possible from analysis of individual strands within the complex system. • In longer term evaluations it becomes more difficult to attribute cause and effect as more time passes and more additional factors come into play. • It is also important to accept that it might not be possible to determine exactly which element of an implemented programme had which effect. • Given the complexity of the system, there is a need to cluster interventions rather than examining individual interventions targeting individual risk factors. Groups of interventions could be tested, comparing and contrasting between groups. In order to do this effectively a sound conceptual model needs to be developed. • A number of interventions have been successfully applied in a general setting but understanding how to apply interventions to individual more challenging situations and how to tailor an intervention appropriately for that family is more difficult. It is also useful to understand who an otherwise successful intervention has not worked for and the reasons behind this. This includes a need to assess whether the intervention itself was inappropriate or whether the implementation of the intervention in those cases was not adequate. 	<p>whether an intervention is working effectively early in its implementation</p> <ul style="list-style-type: none"> • understanding of how long outcomes should be measured for to reach a conclusion on the impact of an intervention • Development of a sound conceptual model to enable analysis of multiple interventions which together could lead to a positive outcome. • Research towards understanding how to tailor interventions in individual, more challenging situations. • There is a need to increase understanding of which intervention/s within a range of options work best in different situations and why, to allow a more targeted approach enabling more families to be reached. • Further research on the 'tail' – those individuals/families where an otherwise successful intervention has not worked and why.
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Local authorities as research vehicles	<ul style="list-style-type: none"> • The majority of early years related policies will be implemented by local authorities and this landscape has increased the potential for comparative research and evaluation in cases where different regions adopt different strategies. Individual authorities will carry out their own evaluation and research but will not necessarily have the inclination or ability to compare more broadly within a research context. • There is also the possibility to carry out larger scale evaluation if a number of local authorities make coordinated major changes to investment in early years. • Further work to evaluate the role of health visitors and how that can be strengthened could offer potential for improvements in capture of routine data, smarter predictors of outcomes, design of interventions and delivery. 	<ul style="list-style-type: none"> • Comparative research where local authorities have adopted different strategies across the early years. • Evaluation of the role of health visitors and how that could be strengthened.
Schools	<ul style="list-style-type: none"> • The 2012/13 Foundation Stage Profile data showed that only 51.7% of children were reaching the 'ready for school' threshold. This figure is derived from judgements in a number of elements of social, physical and intellectual development but given so many are failing, it was not known whether the threshold was set too high. • In deprived areas, evidence suggests that children on free school meals were achieving higher educational outcomes than their counterparts on free school meals in non-deprived areas. Research could help to unpick the reasons behind these 	<ul style="list-style-type: none"> • Further research in this area would be helpful to determine what an absolute threshold for being ready for school would be, as opposed to the current more relativistic framework. • Investigation of the reasons behind differences in attainment for children on free school meals in different areas including differences in service provision in the different areas.

	differences.	
Consensus statement	<ul style="list-style-type: none"> • The group agreed it would be helpful to construct a consensus statement on what constitutes good, safe care and nurturing. There is generally good agreement around this issue but there are difficulties in translating this into help for those families exposed to different types of toxic stress and higher risk children. A consensus statement could be helpful in targeting and correctly engaging the families having difficulties. • The importance of society's collective responsibility was highlighted; some intervention and advocacy needs to be provided from outside so any consensus statement does not focus on individuals. • There is a need to avoid stigmatisation of families and/or children when working to promote the best start in life and further research is needed to determine the best ways to achieve this. There are examples of interventions that have received positive feedback from their target groups, such as work within the Family Nurse Partnership. However, it was also noted that positive engagement is essential but not sufficient to drive positive outcomes if the intervention itself is ineffective. 	<ul style="list-style-type: none"> • Construction of a consensus statement on what constitutes good, safe care and nurturing. • Research into how to design interventions that lead to positive engagement with hard to reach groups.
Behaviour change	<ul style="list-style-type: none"> • Further research is needed on how to change people's behaviour in areas where people generally know what works but do not follow these guidelines in practice eg good diet and nutrition. This links to nudge theory and the need to change societal norms to encourage people to change their 	<ul style="list-style-type: none"> • Research to understand the determinants of unhealthy behaviours and how to shift behaviour towards healthy guidelines.

	behaviours.	
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Additional points:

- although the focus for PHE is on delivery and evaluation of public health interventions, PHE could play an important role in influencing the research funders and stimulating the required basic science and research to provide the contextual information to design, deliver and evaluate interventions most effectively
- PHE could also play an important role in advocating for the long term nature of research and evaluation in the early years area with policy makers, and more broadly the importance of this area across government
- in early years as in other fields there are barriers to the creation of evidence based practice and policy. Evidence does not necessarily clearly point to a single right answer, either because of conflicting pieces of evidence or the complexity of the situation. What constitutes evidence in a research setting will differ from evidence used by politicians or local authorities. There are a number of other factors and pressures, including political and economic factors, that need to be considered when making policy so an evidence-informed rather than entirely evidence-led position should be the aim
- there is a large cultural difference between the NHS and local authorities and there is a risk that communication between the two on issues of health and wellbeing is weak. A systematic evaluation of the transfer of public health research to local authorities and how the budget assigned to public health is being spent was recommended
- there are multiple routes for PHE to engage local authorities in development of the research, development and innovation strategy including through their engagement with CLAHRCs, the School for Public Health Research (SPHR) and academic health science networks which could be helpful to ensure their buy in. The capacity of the front line workforce is already stretched and so it is important to increase capacity in local areas to increase outcome measurement or implement new interventions and to motivate and galvanise the workforce to be part of the research and development process
- people working in early years care are not required to be highly qualified, for instance to a graduate level, and get paid relatively little which means that the workforce for early years care is very different from healthcare. It is seen as prohibitively expensive to employ graduates in early years education/care despite evidence that this improves outcomes for children

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