



How to find the evidence for your theory of change

This document provides guidance on how to find the scientific evidence to answer the seven questions needed to develop your theory of change:

1. What is the primary intended child outcome?
2. Why is the primary child outcome important? (and what is needed to achieve it?)
3. Why it necessary?
4. Why will it add value (over current provision)?
5. Who is it for?
6. What will it do?
7. How much of it is required?

Below we explain why these questions are important, how to go about answering them, and suggest approaches to finding the scientific evidence. Potential sources of evidence are provided at the end of this document.

The seven questions the evidence should answer

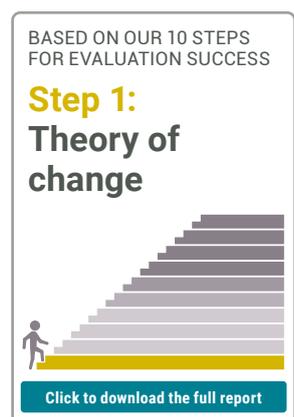
Q1. What is the primary intended child outcome?

Interventions or services should have one or two primary outcomes that are fairly specific. The outcomes should identify short- and long-term improvements that are consistent with what is known about children's development. For example, a school-based social and emotional learning intervention may have short-term outcomes of developing resiliencies such as emotional regulation, and of decreased aggressive behaviour in school, with a long-term outcome of reduced involvement in the justice system. You should avoid outcomes that are either overly ambitious or poorly specified, such as all children will 'flourish' or 'thrive', as these are not specific enough for evaluation purposes and too difficult to measure.

When the child's caregiver is the primary recipient of the intervention, the theory of change should still specify child outcomes that are developmentally appropriate. For example, a parenting intervention may have outcomes related to parents experiencing less stress and learning parenting strategies to support their children's early attachment security, social OR emotional development, and language acquisition. In the long-term this leads to children demonstrating increased school readiness and reduced risk of negative outcomes, including child maltreatment. Evaluations of early interventions repeatedly show that it is not sufficient to assume that children will automatically benefit from interventions that may be beneficial for their caregivers.

Q2. Why is the primary intended child outcome important?

The answer to this question should consider the importance of the outcome from the perspective of children's development. You should be able to justify why the primary intended outcome is important for children's long-term development by mapping short- and long-term outcomes to scientifically-supported theories of child development.





Finding the evidence for questions 1 and 2: Ideally, short-term outcomes should be consistent with what is known about normal child development at a specific age. A good place to start looking at information about key milestones and competencies is in early cognitive development reports such as the *EIF Foundations for Life* report: <https://www.eif.org.uk/report/foundations-for-life-what-works-to-support-parent-child-interaction-in-the-early-years>

Another route is through contacting academics working in developmental psychology at local universities. These experts will be well versed in the current theories of child development and can help you to navigate the literature.

Online handbooks, encyclopaedias or compendiums such as the *Encyclopaedia of Early Childhood Development* or the *Handbook of Child Psychology and Developmental Science*, also provide comprehensive overviews of child development within specific areas of interest. Although the series is costly, authors will frequently provide copies of their contributions for free, if contacted through their institutions or the ResearchGate website.

Q3. Why is it necessary?

Interventions are developed to fulfil a need. Needs assessments are an important tool to help you to understand the needs of your population, particularly for system-level evaluations. A needs assessment can help you to understand what the needs are, who has them, and how severe they are.

A science-based theory of change should also be able to justify the need for an intervention from the perspective of what is known about the developmental processes that contribute to the intended outcomes. For example, many theories of change identify children's language as an important outcome to target, despite the fact that the majority of children learn how to talk with seemingly little instruction. Nevertheless, children differ in their ability to talk and these differences are scientifically linked to developmental processes occurring between the child and their environment which support the acquisition of language. A science-based theory of change should be able to specify how the intervention will address developmentally relevant processes by:

- identifying the specific processes it is trying to improve
- justifying why these developmental processes are important on the basis of the scientific evidence.

It should also help you to specify how to identify children who are either at increased risk of delayed development or are experiencing delayed development.

Finding the evidence for question 3: Information about important developmental processes is often available in the overview articles identified for answering questions 1 and 2 above. However, findings from cohort studies also provide a useful starting point for understanding how various risks impact developmental processes over time.

Birth cohort studies are population-wide observational studies that recruit families at the child's birth and then measure developmental outcomes at regular intervals throughout childhood. A list of recent birth cohort studies is provided at the end of this guide. Articles summarising the findings from cohort studies can also be found in the list of top journals.



Q4. Why will it add value?

For an intervention or service to have an impact, it needs to provide value over what is currently available. In other words, it needs to fill a gap. Quite often, gaps are identified based on needs identified by families living in the community, or by practitioners who work with these families.

For system-level evaluation, it is important to understand the whole system as it currently is and how it is likely to change. One way to do this is through system mapping. This involves identifying all the parts and relationships in a system that are available and important, and those that are expected to change, and how they will change.

Scientific findings can also help towards your understanding of whether your intervention or service will add value, by helping to identify gaps and why they exist. For example, gaps in the availability of effective interventions may exist because interventions have not yet been developed or rigorously tested. Alternatively, they may have been rigorously tested but have not yet been shown to be effective. Understanding why evidence gaps exist is essential so that you do not inadvertently replicate the circumstances that may have led to the gaps in the first place. A well-developed theory of change should therefore not only articulate why the intervention or service will add value but how it might avoid the pitfalls that have caused similar approaches to fail in the past.

Finding the evidence for question 4: Systematic reviews summarise what is known about the strength of evidence underpinning a group of practices with a similar aim. They are also quite useful for identifying where there are evidence gaps.

The Cochrane Library is a particularly useful resource for understanding the strength of evidence underpinning a wide variety of healthcare practices. The Campbell Library similarly conducts reviews considering the evidence underpinning social interventions. For individual interventions, the EIF Guidebook is a good place to look for information on the strengths and weaknesses of interventions related to early help.

Q5. Who is it for?

The answer to this question should carefully consider who the intervention or service is and is not for. This answer should cover, at the very least, the age range and level of need of the target population. The impact of an intervention will be greatest if it is delivered to the children and families who need it most. For many interventions or services, there will also be families who may be too vulnerable to benefit. This is likely to be particularly true of families where there are multiple, complex issues, including child protection concerns. Likewise, there will always be children and caregivers who do not require any additional support.

You should therefore use scientific findings to determine who is most likely to benefit from your intervention or service.

Finding the evidence for question 5: Cohort studies are a good place to gain a preliminary understanding of children's needs in various age ranges. However, information pertaining to this question can also be found in articles summarising the findings from individual interventions (as described below) within the sections describing the characteristics of the study participants.





Q6. What will it do?

No theory of change is complete without specifying what the intervention or service will do. However, the initial confirmation of the theory of change does not need to do this in any great detail, as this is the primary objective of steps 2 (logic model) and 3 (blueprint). Nevertheless, it is useful to consult the scientific evidence base to find out more about the relative impact of various activities to determine the content of your own intervention or service.

Q7. How much of it is required?

Decisions about how much of the intervention is required should also consider the needs of the target population. Families with more complex needs often require more intensive support, although the details about the frequency and intensity of an intervention or group of interventions are rarely confirmed until Steps 2 and 3. At the initial stages of confirming a theory of change, it is only necessary to identify whether support will be high or low intensity, and suitable for meeting the needs of the target population. Further information about intensity will need to be determined through ongoing testing and evaluation, as described in subsequent steps.

Finding the evidence for questions 6 and 7: Many of the details of effective interventions are provided in their published evaluations. 'What Works' clearinghouses, such as the EIF Guidebook are a good place to find out more about the ways in which effective interventions operate. Blueprints for Healthy Youth Development and the Penn State University EPISCenter also provide the details of various interventions' logic models. Google Scholar or other relevant academic databases can be searched using key terms to identify additional studies relevant to your intervention's theory of change.

This summary is based on two EIF guides:

- *10 steps for evaluation success:* <https://www.eif.org.uk/resource/10-steps-for-evaluation-success>
- *Evaluating early help: A guide to evaluation of complex local early help systems:* <https://www.eif.org.uk/resource/evaluating-early-help-a-guide-to-evaluation-of-complex-local-early-help-systems>

List of useful evidence sources

Overviews of child development

- *The Handbook of Child Psychology and Developmental Science:* <https://bit.ly/2TCzmkR>
- *Encyclopaedia on Early Childhood Development:* <http://www.child-encyclopedia.com>
- Harvard centre on the Developing Child: <https://developingchild.harvard.edu>
- Zero to Three: <https://www.zerotothree.org/early-development>
- Outcomes framework: An equal start: https://www.cypnow.co.uk/digital_assets/an_equal_start.pdf
- Outcomes framework: measuring what matters: <http://www.instituteoftheequity.org/resources-reports/measuring-what-matters-a-guide-for-childrens-centres/measuring-what-matters.pdf>
- Handbook: Preventing Mental, Emotional, and Behavioural Disorders Among Young People: Progress And Possibilities: http://www.prevencionbasadaenlaevidencia.com/uploads/PDF/RP_Preventing_young_people_disorders_NRCIM.pdf





Birth cohort studies

- The Avon Longitudinal Study of Parents and Children (alspac; also referred to as children of the 90s) has been tracking two cohorts of 14,000 children living in the bristol area since 1991 and 1992: <http://www.bristol.ac.uk/alspac/participants>
- The Canadian Healthy Infant Longitudinal Development (CHILD) Study has been tracking the development of 3,400 children since 2009: <http://childstudy.ca>
- The Dunedin Study in New Zealand has been tracking the development of 1,037 babies since 1972: <https://dunedinstudy.otago.ac.nz>
- Growing Up in Australia has been following the development of 10,000 children since their births in 2003: <https://growingupinaustralia.gov.au/research-findings>
- Growing Up in Scotland had been tracking the development of children in three cohorts:
<https://growingupinscotland.org.uk>
 - » Birth cohort: 2,858 children, born in 2002/03
 - » Birth cohort 1: 5,217 children, born in 2004/05
 - » Birth cohort 2: 6,127 children, born in 2010/11
- The Millennium Cohort Study (MCS) has been tracking over 19,000 British children since 2000: <https://cls.ucl.ac.uk/cls-studies/millennium-cohort-study>

Systematic reviews

- Cochrane Database of Systematic Reviews: <https://www.cochranelibrary.com/cdsr/about-cdsr>
- The Campbell Collaboration: <https://campbellcollaboration.org/library.html>
- EPPI Centre, a centre focusing on systematic reviews and research use. Among other resources, it contains an index of systematic reviews, with summaries, under the Publications tab: <https://eppi.ioe.ac.uk/cms>

What works clearinghouses

- The EIF Guidebook: <https://guidebook.eif.org.uk>
- Blueprints for Healthy Youth Development: <https://www.blueprintsprograms.org>
- Penn State University EPISCenter: <http://www.episcenter.psu.edu>
- California Evidence-Based Clearinghouse for Child Welfare: <http://www.cebc4cw.org/assessment-tools/measurement-tools-highlighted-on-the-cebc>
- National Institute of Justice: <https://www.nij.gov/Pages/welcome.aspx>
- National Registry of Evidence-based Programmes and Practices (SAMHSA): <https://www.samhsa.gov/nrepp>
- Centre for Analysis of Youth Transitions (IFS): <http://cayt.mentor-adepris.org>

Critical appraisal

- Critical Appraisal Skills Programme, which provides a number of critical appraisal checklists for assessing the robustness of a range of studies, depending on the research design used: <https://casp-uk.net/casp-tools-checklists>





Journals

General child development:

- *American Psychologist*: <https://www.apa.org/pubs/journals/amp/>
- *British Journal of Developmental Psychology*: <https://bpspsychub.onlinelibrary.wiley.com/journal/2044835x>
- *Child Development*: <https://onlinelibrary.wiley.com/journal/14678624>
- *Child Development Perspectives*: <https://onlinelibrary.wiley.com/journal/17508606>
- *Developmental Psychology*: <https://www.apa.org/pubs/journals/dev/>
- *Developmental Science*: <https://onlinelibrary.wiley.com/journal/14677687>
- *Infant and Child Development*: <https://onlinelibrary.wiley.com/journal/15227219>
- *Infant Behaviour and Development*: <https://www.journals.elsevier.com/infant-behavior-and-development>
- *Plos One*: <https://journals.plos.org/plosone/>
- *Prevention Science*: <https://link.springer.com/journal/11121>
- *Psychological Bulletin*: <https://www.apa.org/pubs/journals/bul/>

Cognitive development:

- *Cognition*: <https://www.journals.elsevier.com/cognition>
- *Journal of Experimental Child Psychology*: <https://www.journals.elsevier.com/journal-of-experimental-child-psychology>

Social & emotional development, and self-regulatory/behavioural development:

- *Development and Psychopathology*: <https://www.cambridge.org/core/journals/development-and-psychopathology>
- *Journal of Consulting and Clinical Psychology*: <https://www.apa.org/pubs/journals/ccp/>
- *Journal of Child Psychology and Psychiatry*: <https://onlinelibrary.wiley.com/journal/14697610>

Physical development:

- *British Medical Journal*: <https://www.bmj.com/>
- *Journal of the American Medical Association*: <https://jamanetwork.com/journals/jama>
- *The Lancet*: <https://www.thelancet.com/>
- *Pediatrics*: <http://pediatrics.aappublications.org/content/143/1?current-issue=y>

Child abuse and neglect:

- *Child Abuse and Neglect*: <https://www.journals.elsevier.com/child-abuse-and-neglect>
- *Child and Family Social Work*: <https://onlinelibrary.wiley.com/journal/13652206>
- *Child Maltreatment*: <https://journals.sagepub.com/home/cmxc>
- *Child Welfare*: <https://www.cwla.org/child-welfare-journal/>
- *Children and Youth Services Review*: <https://www.journals.elsevier.com/children-and-youth-services-review>





- *Development and Psychopathology*: <https://www.cambridge.org/core/journals/development-and-psychopathology>

Substance misuse:

- *Addiction*: <http://www.addictionjournal.org/>
- *American Journal of Community Psychology*: <https://onlinelibrary.wiley.com/journal/15732770>
- *Frontiers of Psychiatry*: <https://www.frontiersin.org/journals/psychiatry>
- *Journal of Adolescence*: <https://www.journals.elsevier.com/journal-of-adolescence/>
- *Journal of Adolescent Health*: <https://www.jahonline.org/>
- *Journal of Community Psychology*: <https://onlinelibrary.wiley.com/journal/15206629>
- *Prevention Science*: <https://link.springer.com/journal/11121>

Risky sexual behaviour:

- *American Journal of Community Psychology*: <https://onlinelibrary.wiley.com/journal/15732770>
- *Journal of Adolescence*: <https://www.journals.elsevier.com/journal-of-adolescence/>
- *Journal of Adolescent Health*: <https://www.jahonline.org/>
- *Journal of Community Psychology*: <https://onlinelibrary.wiley.com/journal/15206629>
- *Prevention Science*: <https://link.springer.com/journal/11121>