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The case for a payment by results commissioning model for one-to-one educational support for children in care

A report for Equal Education

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Introduction

What is the purpose of this study?

Pro Bono Economics were commissioned by Equal Education to review the evidence linking improved educational attainment for Looked After Children (LAC) to receipts and costs for government departments, develop a model that can quantify this relationship and assess the factors that affect the viability of a payment by results commissioning approach for their services.

Who are Pro Bono Economics?

Pro Bono Economics are a charity that matches expert volunteer economists to charities to help improve their impact and value. PBE charity projects help organisations to measure performance, improve their services and better track outcomes.

Who are Equal Education?

Equal Education is a social enterprise with the vision to narrow the education gap. Equal Education recruits and trains teachers to work one to one with LAC to reduce the observed reduction that care status has on educational attainment.

Background to Equal Education

How does the Equal Education programme work?

Equal Education are commissioned by Local Authorities to provide one-to-one tuition to Looked After Children. This is normally funded from the Pupil Premium provided to Local Authorities to fund additional support for disadvantaged pupils.

They carefully match the expertise and subject specialisms of hand-picked tutors and specialist teachers to students' individual needs.

The young people supported are typically (but not exclusively) secondary school age and the level of support varies significantly depending on need. Since 2012 they have supported 800 students across 40 Local Authorities.

Outcomes for Looked After Children

- In 2016/17 just 44% of Disadvantaged Pupils (including Looked After Children) achieved an A*-C grade in English and Maths at GCSE compared to a 71% of other students (DfE, 2018).
- Looked After Children are five times more likely to become NEET (Not in Education Employment or Training) at age 19 (Social Finance, 2016).

Structure of the project

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The project has been broken into three key stages:

Phase 1

Review of available evidence relating to additional educational support for LACs

This section reviews the chain of evidence required to link one-to-one tuition to impacts on government revenue and expenditure.

Phase 2

Modelling impact on government revenue and expenditure

Available evidence is used to build a model linking GCSE results to life outcomes and ultimately the net fiscal impact.

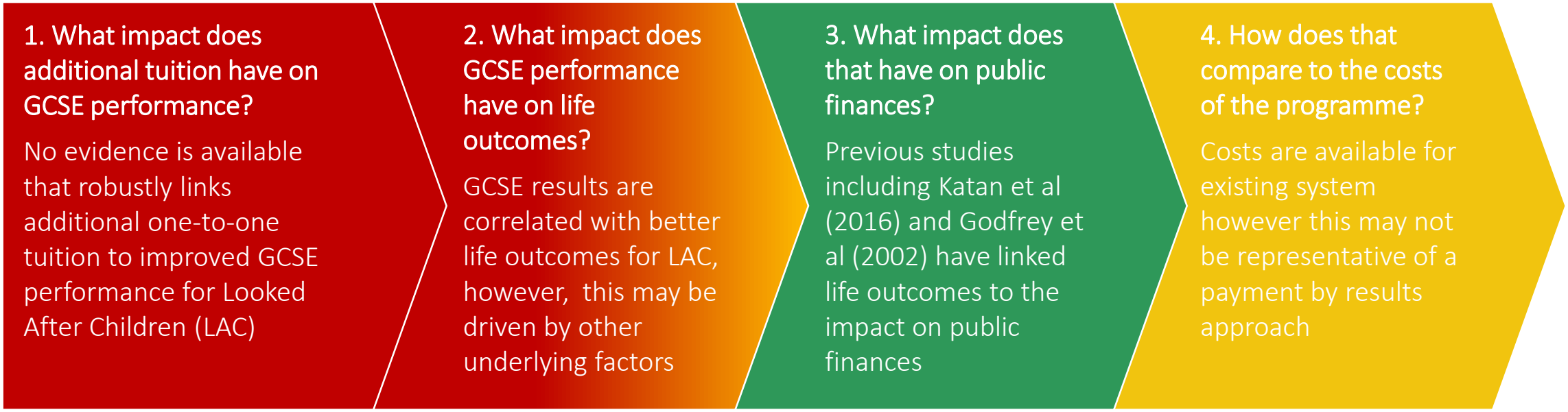
Phase 3

Reviewing factors affecting viability of a payment by results system

The model is used, in conjunction with other data, to assess the case for a payment by results system.

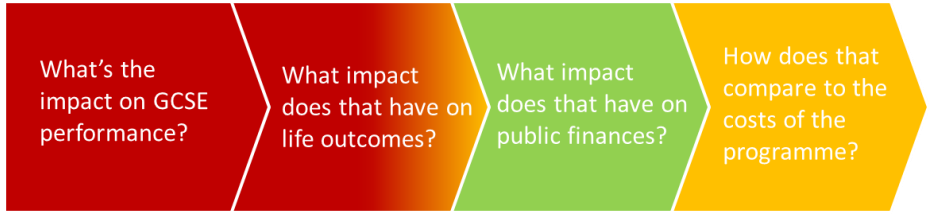
Phase 1: What evidence is available?

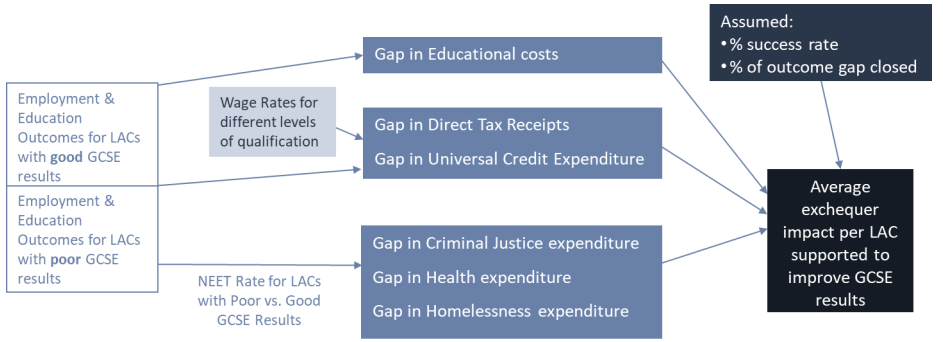
A chain of evidence needs to be constructed in order to understand the viability of a payment by results system for providing additional educational support for Looked After Children. A review of the evidence available for each link in the chain is summarised below:



Little or no evidence available | Partial evidence available | Established evidence sources available

Phase 1: How does this affect phase 2?





Given the limited evidence available for the first two links in the chain, Phase 2 of the project assesses the net fiscal impact of improving GCSE performance for Looked After Children across a range of different scenarios for:

- Programme success rate at improving GCSE results for LACs, and;
- Reduction in the gap for life outcomes following an improvement in GCSE results.

This analysis is intended to help understand the factors affecting the viability of a payment by results system by answering the following questions:

- Is it possible for fiscal savings to exceed the costs of the programme?
- Which areas of government stand to benefit the most?
- What is a likely payoff period of the programme for government?

Phase 2: What is included in the analysis?

This analysis follows Katan et al. (2016) and Godfrey et al. (2002) by assessing the net fiscal savings* from reductions in expenditure on public services and increased tax revenue.

The analysis covers:

- Increased Direct Tax Receipts
- Universal Credit Expenditure
- Expenditure on education
- Expenditure on health services
- Expenditure on statutory homelessness services
- Expenditure on the criminal justice system

This is offset against the Direct Costs of the programme, assumed to be equivalent to the £1,900 pupil premium for each of two years. Further details of the methodology used are available in Annex A and a sensitivity analysis exploring the impact of key assumptions is summarised in Annex B.

* This analysis includes both "cashable savings" that can result in an immediate change in expenditure and "non-cashable" savings where levels of public expenditure are fixed but it is assumed the resources are put to another use of equivalent value.

Phase 2: Are there returns to government?

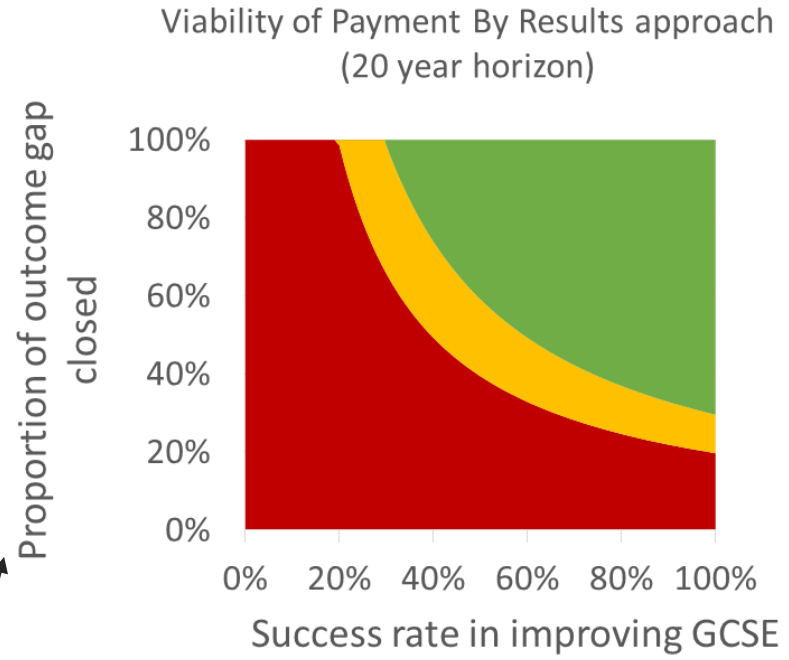
This diagram shows how the net fiscal impact of improving GCSE performance for LACs over a period of 20 years depends on the combination of the programme success rate and impact on life outcome scenario.

For each combination of success rate and impact on life outcomes we assess the net fiscal impact.

= Fiscal benefits less than costs

= Fiscal benefits up to 50% greater than costs

= Fiscal benefits more than 50% greater than costs

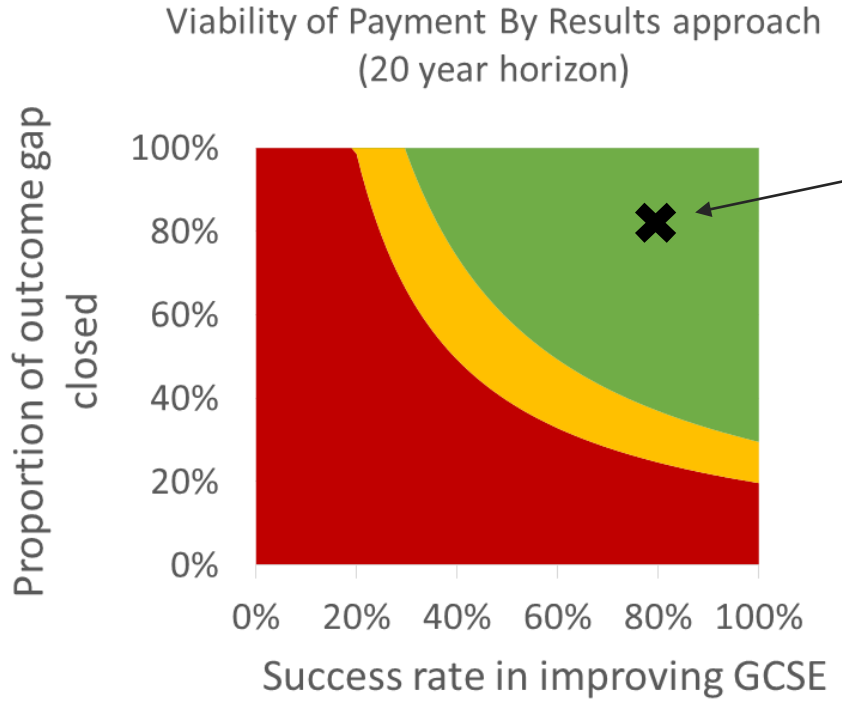


This describes the impact of a successful intervention measured as a proportion of the gap in life outcomes between those LAC that currently obtain good GCSE results and those that obtain poor GCSE results.

This describes the proportion of those that enter the programme that obtain good GCSE results but wouldn't have done without this support.

Phase 2: Illustrative scenario

The potential fiscal saving from the Equal Education programme is likely to exceed programme costs if the programme success rate and/or impact on life outcome both exceed 40-50%. We focus on an illustrative scenario with an 80% success rate and 80% impact on life outcome ('80/80 scenario')



As an illustrative example, in the 80/80 scenario **for every £1 spent on the program, the government could save around £3.50 over a 20 year period.**

= Fiscal benefits less than costs

= Fiscal benefits up to 50% greater than costs

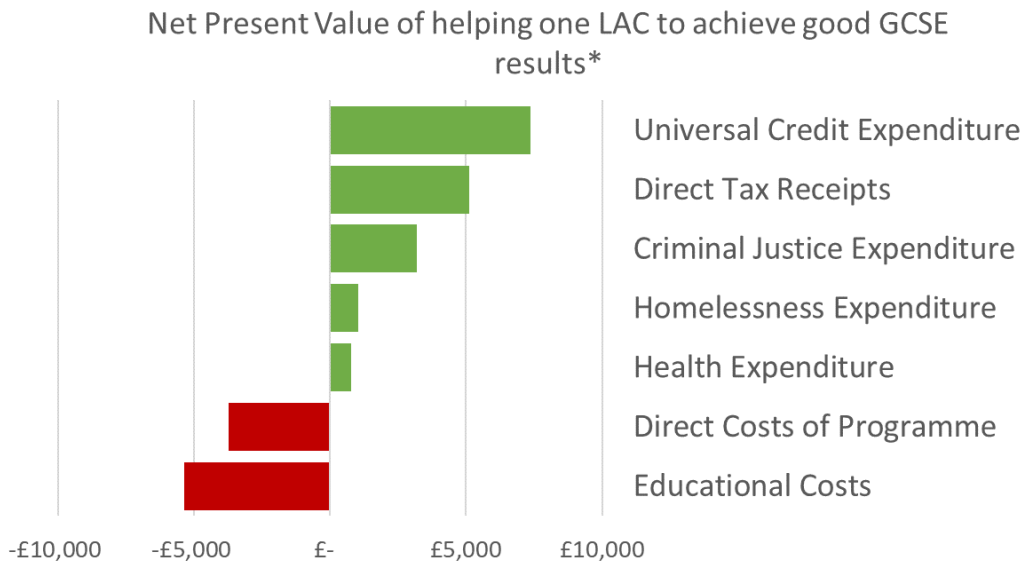
= Fiscal benefits more than 50% greater than costs

Phase 2: Where do the savings come from?

Over a 20 year period the biggest saving to government would be through a reduction in Universal Credit expenditure and an increase in direct Tax revenues.

The net fiscal impact over a 20 year period is broken down by each of the different outcome areas using a scenario in which the programme achieves an 80% success rate and each successful participant closes 80% of the gap in life outcomes against those that currently obtain good GCSE results

Note that improved GCSE performance is correlated with high take-up of Further and Higher Education. This imposes a significant additional cost for taxpayers in the near term, on top of the direct costs of the programme.



* Net Present Value shows the net fiscal impact in 2017/18 prices with near term financial flows weighted more heavily than future financial flows in line with standard Treasury appraisal guidance.

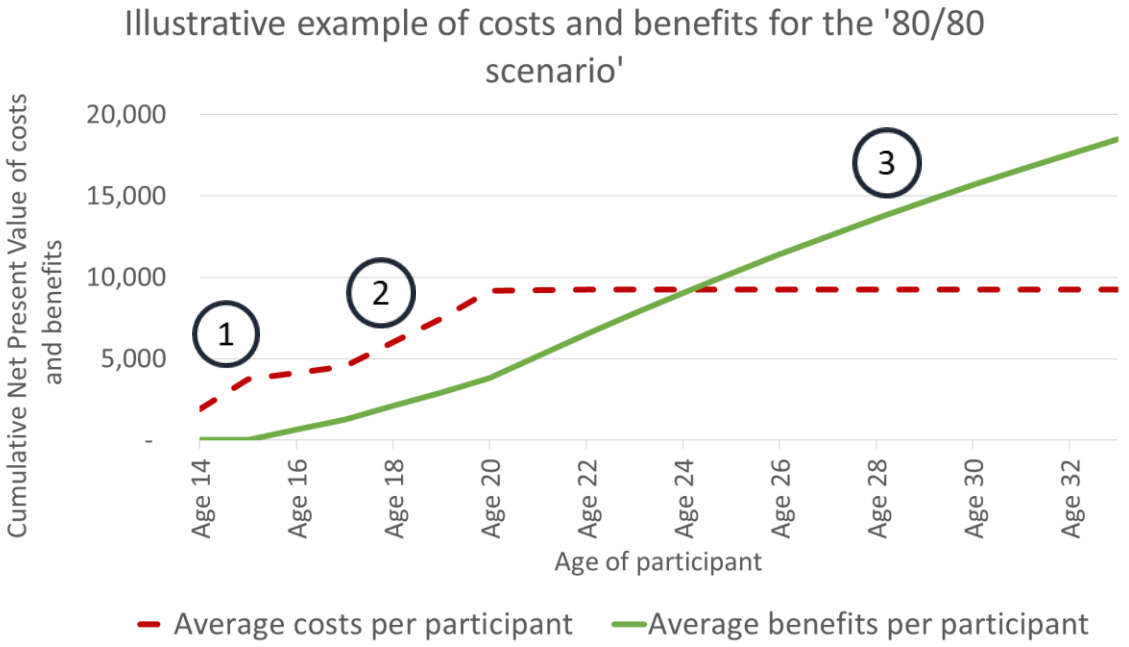
Phase 2: When are the benefits felt?

The point in time at which it's possible for the net fiscal impact to out-weigh the costs of the programme is likely to be in excess of 10 years. This is driven by the fact that many of the fiscal costs are felt in the first six years after the programme starts whilst the benefits are felt over a long period afterwards.

1. The Direct Costs of the programme are incurred before any benefits are felt.

2. Improved GCSE results are likely to increase the uptake of Further and Higher Education, imposing additional costs on government in the near term.

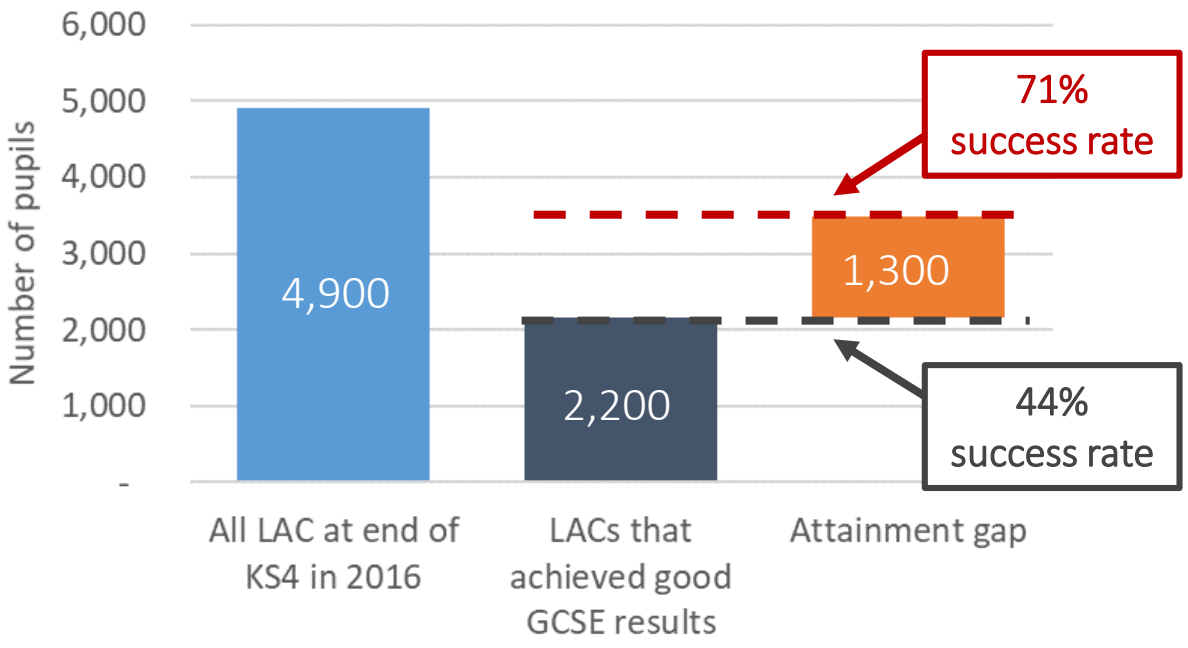
3. Increased uptake of education may actually reduce tax revenues during the 16-19 age bracket but with significantly stronger tax receipts after increasing the chances of completing Higher Education driven by higher employment rates and higher wages.



Phase 3: Factors affecting the viability of payment by results

What is the scale of the total potential savings?

In order for a payment by results system to be viable in practice there needs to be sufficiently large pool of potential savings to be made. We can examine the scale of potential savings using the analysis developed in Phase 2.



- In 2016 there were 4,900 Looked After Children (LAC) reaching the end of Key Stage 4 in England. Of these, 44% attained good results in English and Maths.
- If the proportion of LAC attaining good GCSE were the same as for other pupils (77%) then an additional 1,300 pupils would have achieved good results.
- A Looked After Child with poor GCSEs costs the taxpayer in the region of £72,000 over the 20 year period reviewed whilst a Looked After Child with good GCSEs costs the taxpayer in the region of £52,000, a £20,000 saving for each LAC in the attainment gap.
- Therefore closing the LAC attainment gap in 2016 could have saved taxpayers in England up to £26 million over a 20 year period.

Phase 3: Factors affecting the viability of payment by results

What role does the "investor" typically pay in a payment by results system?

In a payment by results system an investor funds the initial programme costs and receives a return on this investment as the programme meets pre-agreed objectives or results.

The investor requires a return on the investment that reflects the level of risk associated with a programme not achieving the pre-agreed results.

As a result, a payment by results system is only viable where the programme can deliver sufficient savings to the government to cover both the costs of the programme and this investor return.

How can we asses the importance of investor returns on the viability of a payment by results system?

In order to explore the impact of investor returns on the viability of a payment by results system we use a funding scenario. Here we assume a Social Impact Bond where:

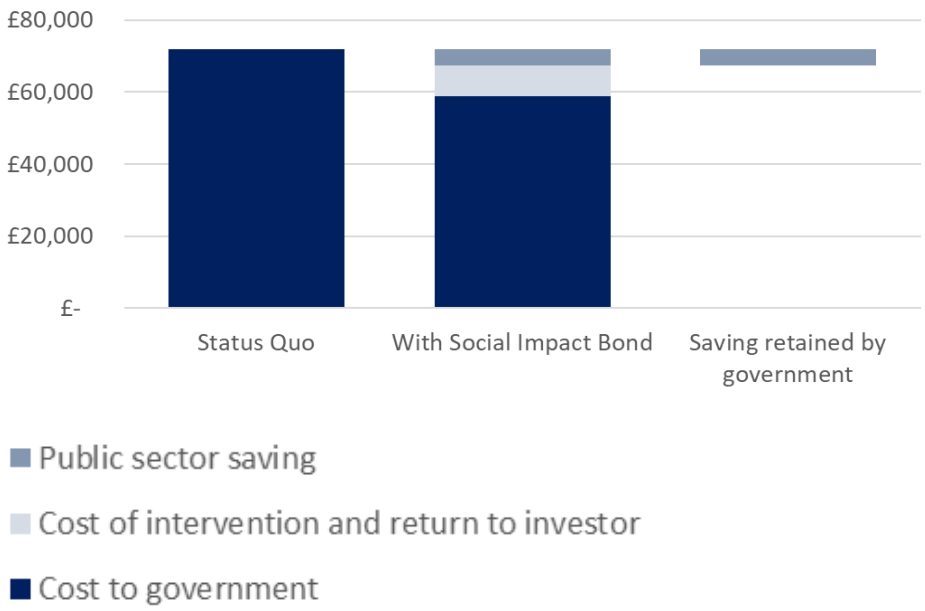
- The investor covers the full costs of the programme at the start of the bond.
- The investor is compensated over a 6 year period.
- A return of 15% per annum is required to compensate for the risks associated with the bond

Phase 3: Impact of investor returns on viability of “payment by results”

The results of the funding scenario suggest that a payment by results system could be viable:

- Over a 20 year period the total costs to government for a single LAC who does not achieve good GCSE results is around £72,000 and £52,000 for a LAC with good GCSEs.
- If the programme has an 80% success rate in improving GCSE results and closes 80% of the gap in life outcomes against those that currently obtain good GCSE results, then the expected cost to government for a pupil that currently does not achieve good GCSE results falls from £72,000 to £59,000 per LAC.
- The costs of the programme are equivalent to £3,700 with a return to investor required of around £4,900
- This still leaves savings retained by government of £4,300.

Breakdown of returns from Social Impact Bond funding scenario



Summary of key findings

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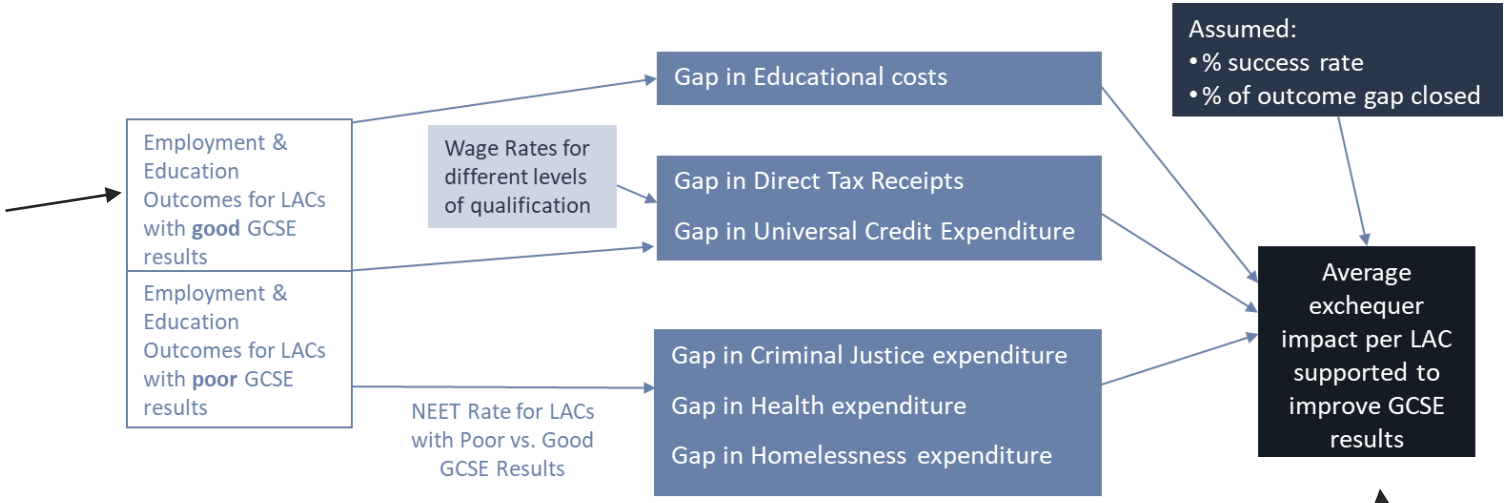
- There are significant evidence gaps around the success rate of one-to-one tuition in improving GCSE results for Looked After Children and the impact that improved GCSE results have on life outcomes that make a full assessment of the viability of a payment by results system challenging.
- However, analysis suggests that, if a cross-government perspective is taken, there could be positive net fiscal impact over a 20 year time period, provided that Equal Education can successfully support the achievement of good GCSE results in 40%-50% of cases and that life outcomes are improved to close the gap against those LACs that currently achieve good GCSE results by at least 40-50%.
- Closing the overall attainment gap could generate up to £26 million in savings to taxpayers in England for each cohort of Looked After Children that complete their GCSEs.
- These potential savings could be sufficient to cover both the costs of the programme and a return to an investor to support a payment by results system funded through a social impact bond.

Annex A - Methodology

Overview of approach

There is insufficient evidence to directly link each of the modelled life outcomes to GCSE performance. A chain of evidence based assumptions is used, outlined in the diagram below.

1. The starting place is understanding how the education and employment outcomes for Looked After Children currently differ for those that obtain "good" GCSEs and those that obtain "poor" GCSEs



2. From this, the net fiscal impact can be estimated either directly (e.g. Education, Tax and Universal Credits) or indirectly based on differences in NEET rates (e.g. Criminal Justice, Health or Homelessness).

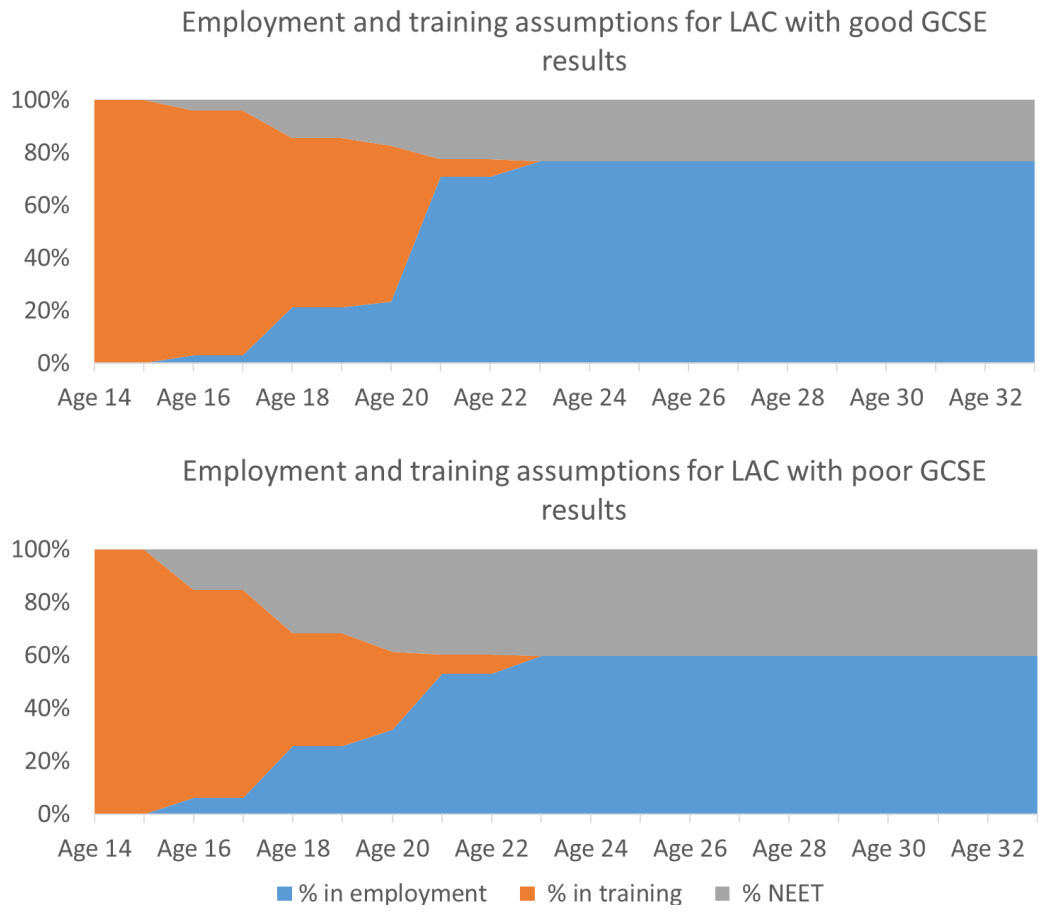
3. Success rate and impact on life outcome scenarios can then be applied to generate an expected net fiscal impact per LAC supported to improve GCSE results.

Employment and Educational Outcomes

Employment and Educational outcome assumptions are driven by DfE (2015). These provide a snapshot of outcomes at Age 16 and Age 18 that are used to project changes overtime. 90% of those that complete Higher Education are assumed to find employment based on statistics from the Higher Education Statistics Authority.

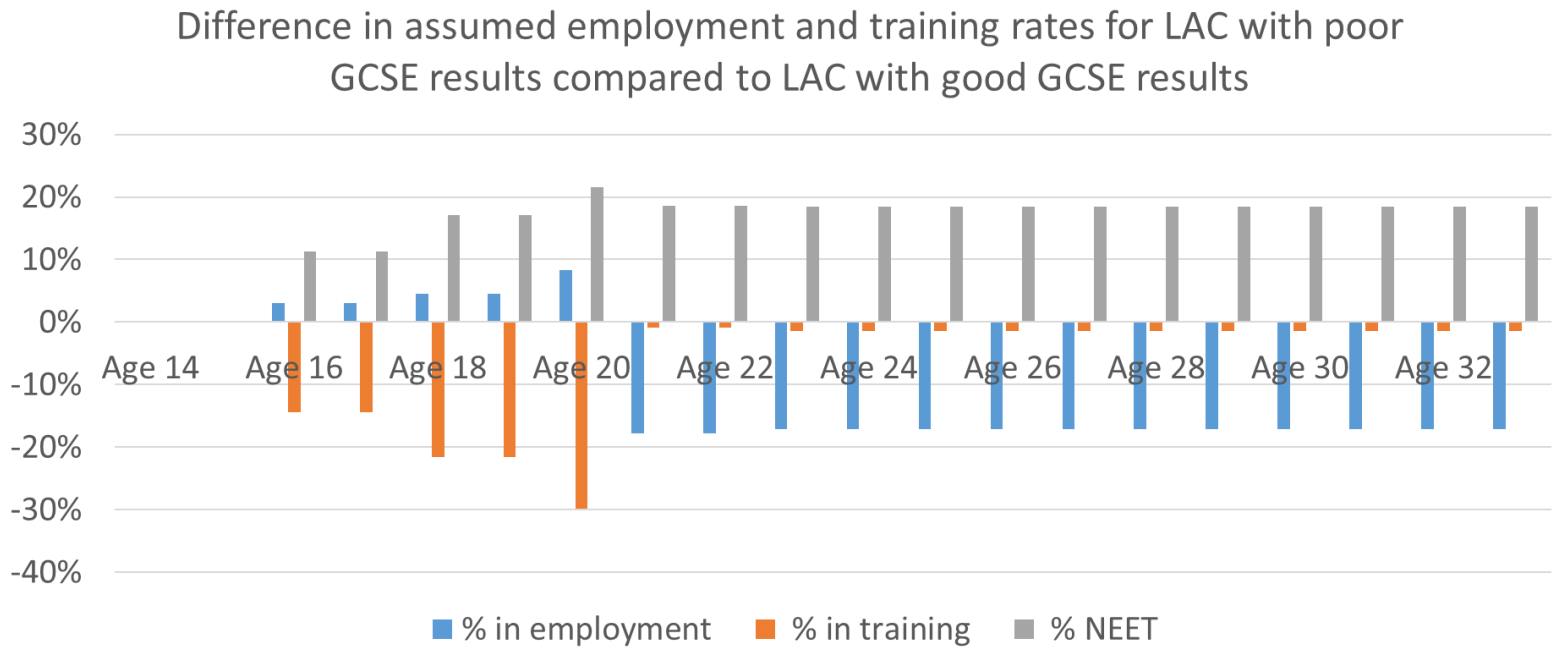
A key assumption is that the proportion of children that are Not Employed or in Education or Training (NEET) remains constant following Higher Education. This assumption is tested in the Sensitivity Tests outlined in Annex B.

Unit Costs of education are taken from IFS (2017).



Employment and Educational Outcomes

Under the assumptions outlined on the previous page there is a significant difference in the proportion of LACs with good GCSE results that continue with Further and Higher Education and a difference in the long-term assumed NEET rate of 17%.

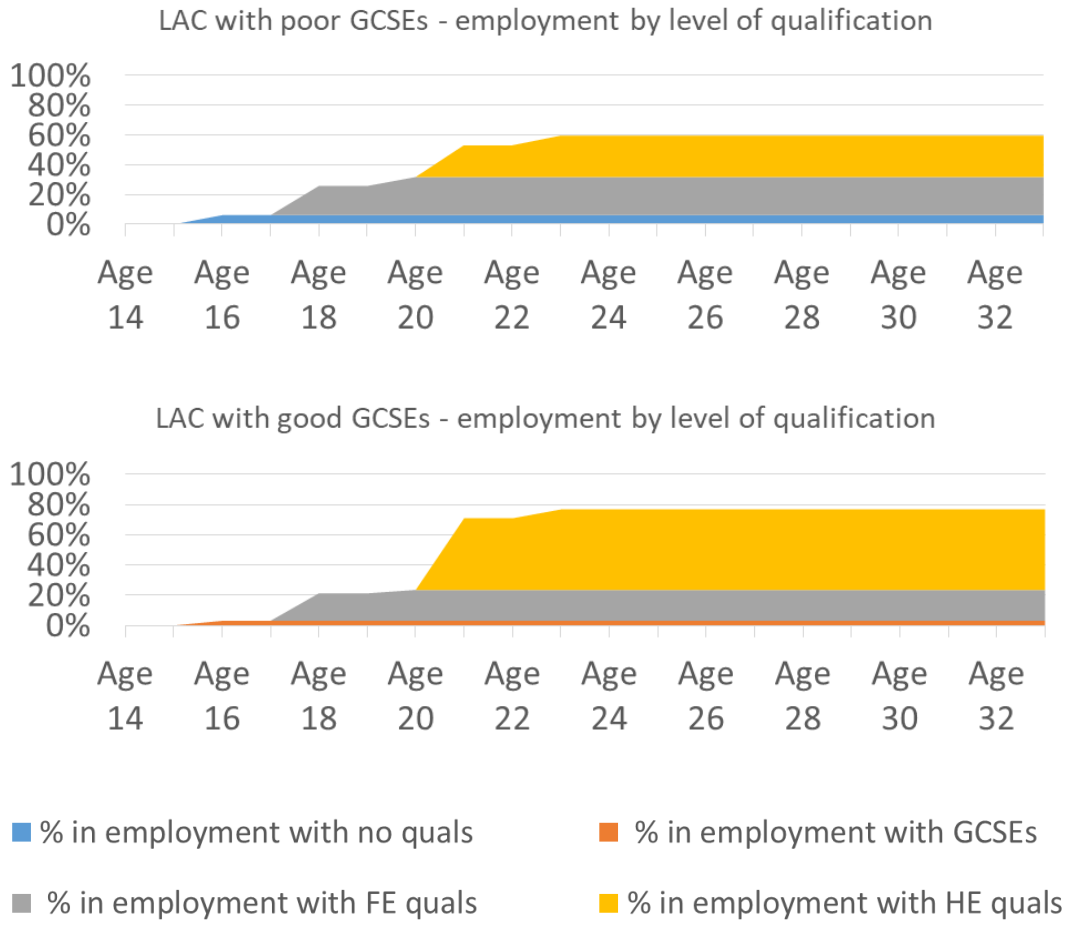


Tax and Universal Credit

The Employment and Educational assumptions outlined provide a picture of the proportions of LAC that are employed with different levels of qualifications.

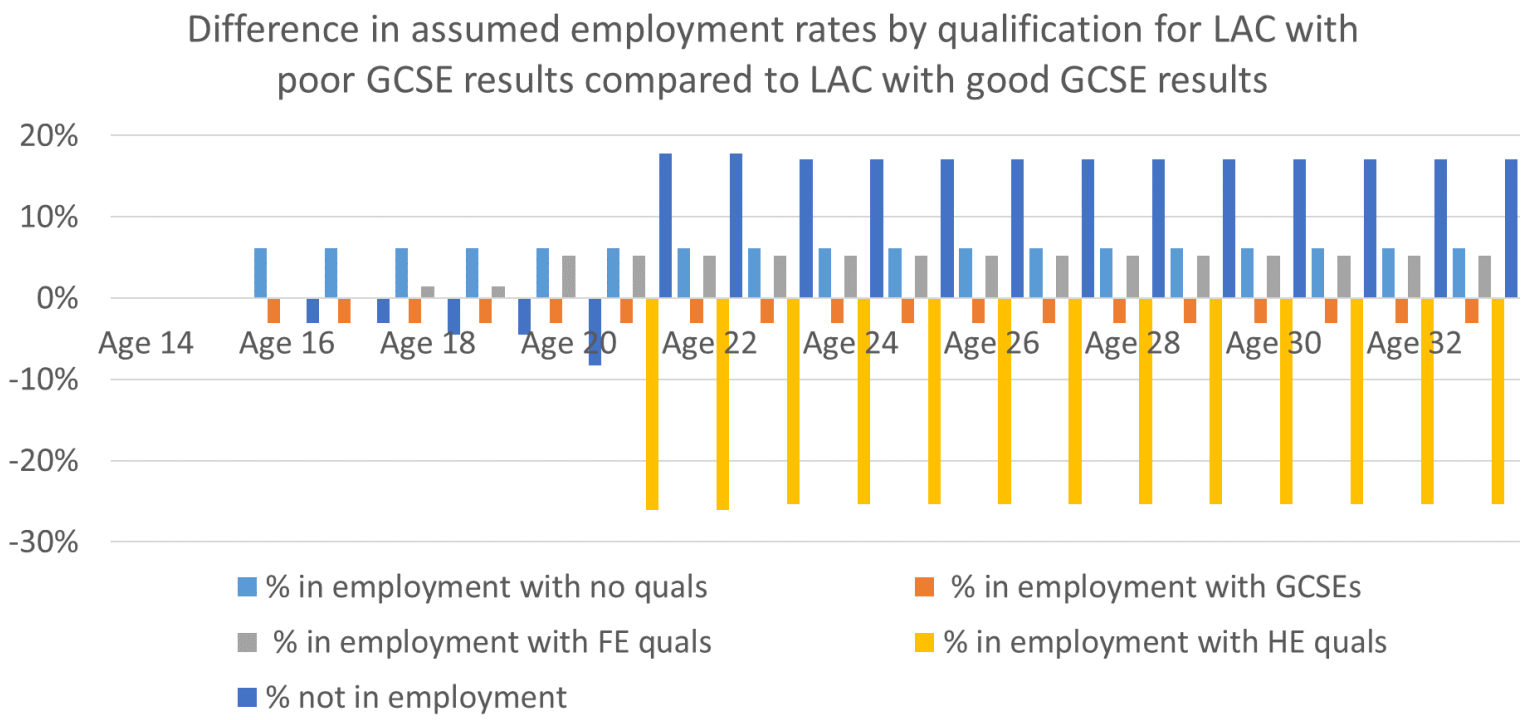
It is assumed that those with the lowest qualifications (poor GCSE results) receive the minimum wage but that wages for those with higher qualifications are higher in line with the uplifts estimated in the BIS (2011).

Income Tax and National Insurance Contributions are then calculated on the basis of the 2017/18 rates and thresholds. Universal Credit calculations are made on the basis of those that are NEET receiving the National Average payment, withdrawn for those receiving income at a rate of 63 pence for each £ earnt.



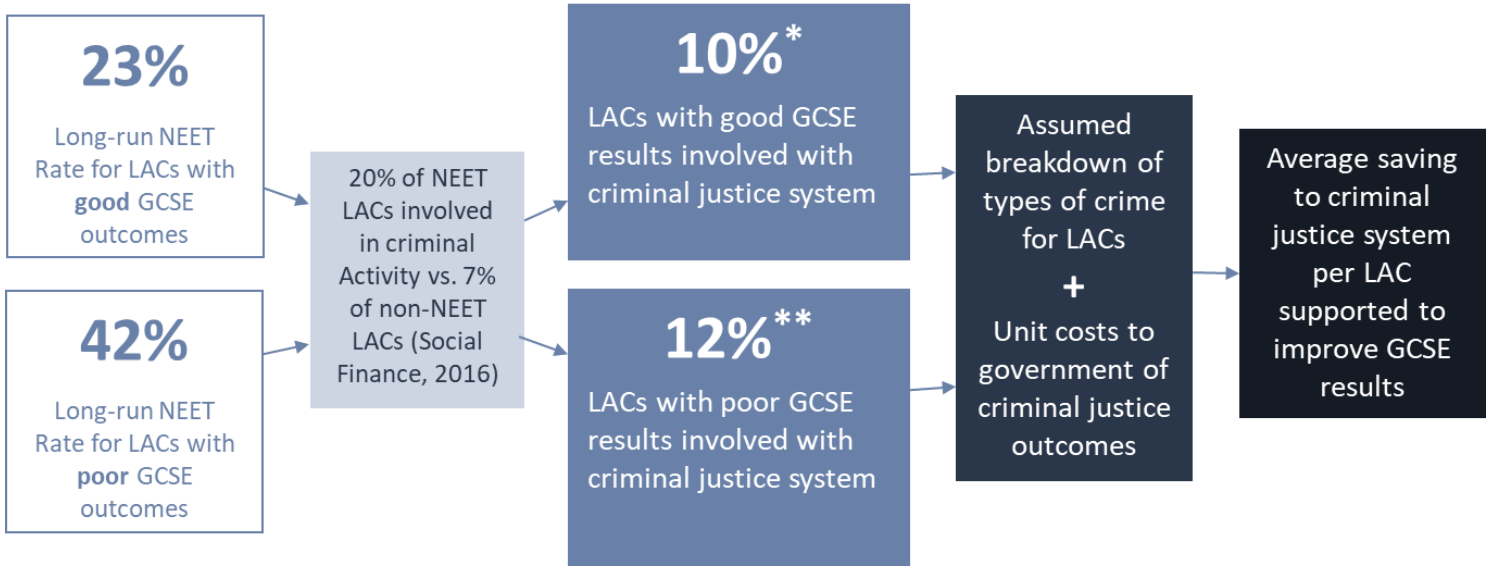
Tax and Universal Credit

Under the assumptions outlined on the previous page there is a significant difference in the proportion of LACs with good GCSE results that obtain Higher Education and therefore obtain a higher rate of employment at higher wage rates.



Criminal Justice Outcomes

The diagram below provides an overview of the criminal justice outcomes.



The breakdown of types of crime for LACs is based on data published by DfE & MoJ (2016). Unit costs of crime are taken from New Economy (2015) and NAO (2011).

It is assumed that those with good GCSE results and poor GCSE results commit the same types of crime.

* This is based on 23% NEET with 20% criminal activity PLUS 77% non-NEET with 7% criminal activity = 23%*20% + 77%*7% = 10%
** This is based on 40% NEET with 20% criminal activity PLUS 60% 60% non-NEET with 7% criminal activity = 42%*20% + 58%*7% = 12%

Health Outcomes

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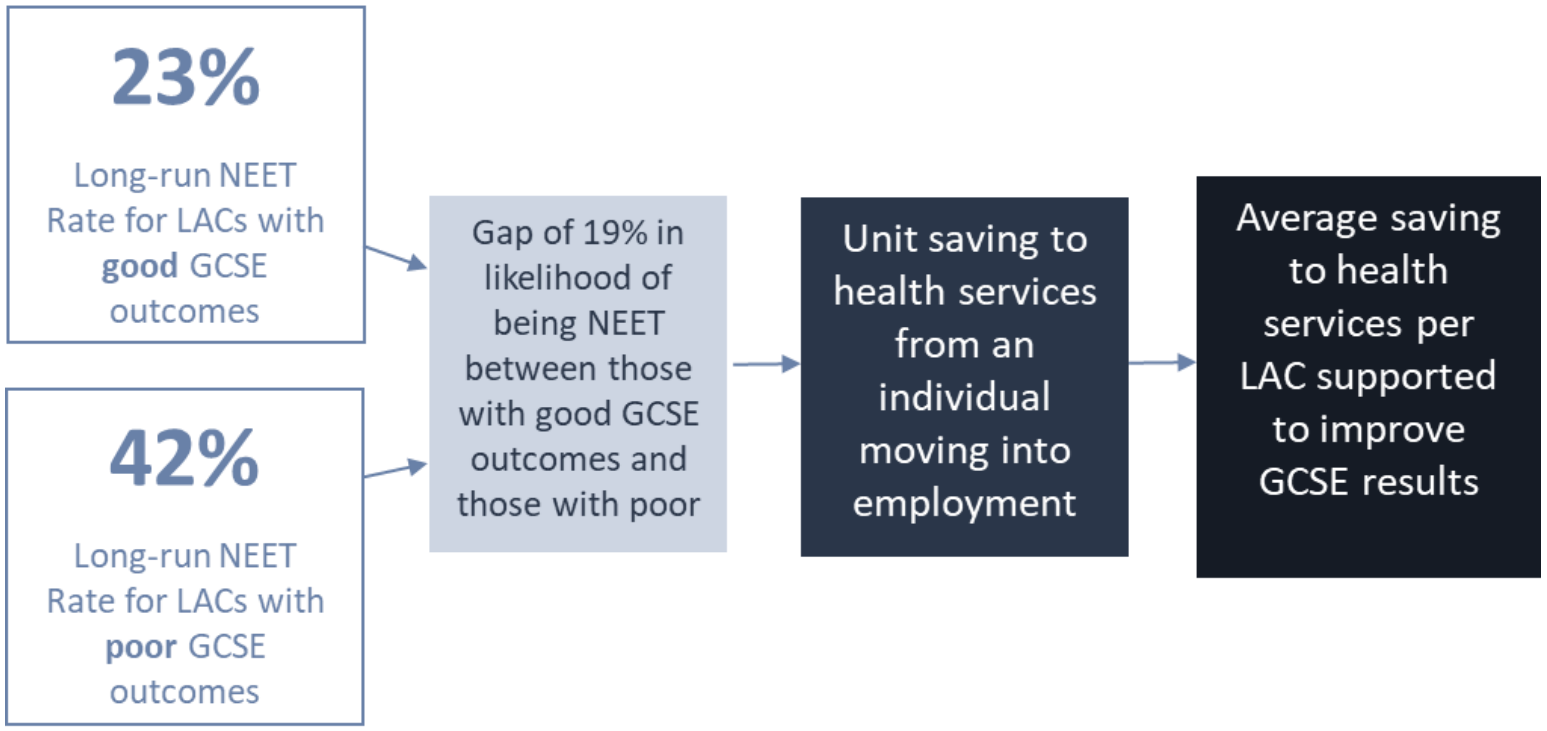
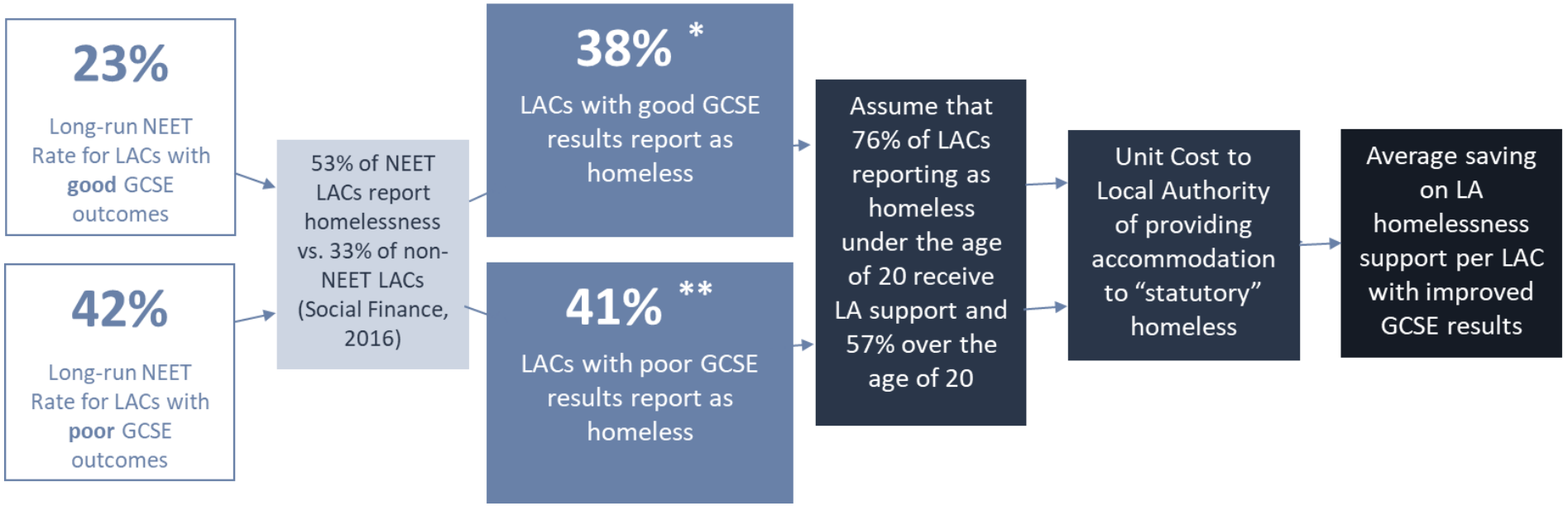
An average cost saving to health services from a person moving from being unemployed to employment from DWP (2011) was applied to the change in expected NEET rate to estimate the scale of savings from Health Expenditure.



Homelessness costs

A conservative approach focused on the costs to Local Authorities of providing shelter to the "statutory homeless" is used to avoid double counting of other benefits. The estimate is driven by evidence relating to the difference in homelessness for LACs who are NEET vs. those that are not NEET.



* This is based on 23% NEET with 53% homelessness PLUS 77% non-NEET with 33% homelessness = 23%*53% + 77%*33% = 38%
** This is based on 40% NEET with 53% homelessness PLUS 60% non-NEET with 33% homelessness = 42%*53% + 58%*33% = 41%

Annex B – Sensitivity Analysis

Sensitivity Analysis

The Phase 2 analysis is focused on capturing uncertainty around the two key evidence gaps relating to the success rate of one-to-one tuition in improving GCSE outcomes and uncertainty about the impact this will have on life outcomes. However, there remains some uncertainty about other key assumptions in the model. This section reviews some of these key assumptions and explores how sensitive the results are to changes in these assumptions.

Three key assumptions are identified for review in the model based on the level of evidence available to support them or the impact they have on the overall conclusions:

- Scenario 1: Declining long term NEET rates. There is little evidence available around how the unemployment rate for Looked After Children evolves after the age of 19. This scenario assume that they decline after the age of 23 by 1% pt per year so that by age 33 they are 32% for those with poor GCSE results (42% in base case) and 13% for those with good GCSE results (23% in base case).
- Scenario 2: An increase in Universal Credit Payments. The impact of 10% higher minimum Universal Credit payments than the national average used in the base case.
- Scenario 3: A reduction in Educational Costs. Evidence around educational costs is based on average costs rather than the cost of adding one extra student. We explore the impact of educational costs being reduced by 10% from the base case.

Sensitivity Analysis

Results of sensitivity analysis are shown below using a success rate of 80% and assuming that each successful participant closes 80% of the gap in life outcomes against those that currently obtain good GCSE results and compare the Benefit Cost Ratios (the £ benefit to the government for every £ spent) over a 20 year period

Scenario	Benefit Cost Ratio over 20 years	Difference to base case
BASE CASE	3.47	N/A
1. Declining long-term NEET rates	3.51	+0.04
2. Universal Credit payments increase	3.68	+0.21
3. Educational costs reduced	3.62	+0.15

Scenario 1 makes a negligible difference as the NEET rates for both LAC that achieve good GCSE results and LAC that achieve poor GCSE results are assumed to decline at similar rates.

These results demonstrate that although changes in the input assumptions will alter the exact Benefit Cost Ratio that is obtained from the model for any particular scenario, the scale of the changes is not sufficient to alter the broad picture that has emerged from the analysis.

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