

Outcomes for young people who experience multiple suspensions

Allen Joseph and Whitney Crenna-Jennings

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Research Area:
Social Mobility and
Vulnerable Learners



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About the authors

Allen Joseph is a Researcher in the Mental Health, Wellbeing & Inclusion team at EPI. He joined the Education Policy Institute in September 2022 following an undergraduate research internship in June 2021. He has worked as a research assistant at the Department of Education, University of Oxford evaluating a language intervention. Allen graduated with a degree in psychology from the University of Bath.

Whitney Crenna-Jennings is Associate Director for Mental Health, Wellbeing & Inclusion at EPI. Prior to joining EPI in 2017, she worked on several research projects focused on health inequalities and social determinants of health at University College London, Public Health England and FPA UK. At EPI, she has led on research exploring access to child and adolescent mental health services, drivers of young people's wellbeing and mental health, and inclusion issues in education.

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Executive Summary

In this report, we examine the relationship between the number of suspensions, or temporary removals from school, in secondary school and outcomes for pupils in England. We studied a cohort of 585,827 pupils who were registered in a state school in year 7 in 2014, following their time through secondary school until they sat their GCSE exams in 2019.

Pupils with multiple suspensions have poorer education outcomes

- Rates of **suspension from secondary school increased substantially** in the years before the pandemic and reached their highest point in more than a decade in 2022.
- We found that **suspended pupils are, on average, not achieving a standard pass in GCSE English and maths**. In fact, **suspended pupils are, on average, approximately 12 months behind their not-suspended peers**.
- After accounting for other factors, including demographics, socio-economic disadvantage, prior attainment and school characteristics, the effect of multiple suspensions on attainment was reduced by approximately 45 per cent, yet remained significant and stark.
- Although the associations between suspensions and GCSE grades persist after controlling for a wide range of student and school characteristics, we cannot be sure that the suspension itself causes the difference in GCSE grades. Other unmeasured characteristics could be contributing to the association.
- **Multiple suspensions are a risk factor for permanent exclusion**. Pupils suspended ten times were 15 times as likely to be permanently excluded as pupils who were suspended once. This raises questions about the effectiveness of multiple suspensions as a sanction which prevents permanent exclusion.
- By the time they sit their GCSEs, **pupils with multiple suspensions are less likely to be in a mainstream school and more likely to be in alternative provision (AP)**. Pupils suspended ten times were almost 15 times as likely to finish secondary school in alternative provision compared with pupils who were suspended once. Previous research has shown that the proportion of unqualified teachers in AP is higher than in mainstream secondary schools.

Suspension is strongly related to additional needs

- We found that the **proportion of pupils identified with special education needs or disabilities (SEND) increases in line with the number of suspensions**. Pupils suspended ten times were almost three times as likely to be identified with SEND as pupils who were suspended once.
- **Of all SEND types, social, emotional, or mental health needs** were the most common amongst suspended pupils.
- We found that for suspended pupils identified with SEND, **more pupils were identified with SEND before their first suspension rather than after their first suspension**.
- Yet **more suspended pupils identified with social, emotional and mental health needs were only identified as such after their first suspension** – indicating that some pupils who may have benefitted from additional support instead face disciplinary action.
- **The proportion of young people identified with a social, emotional or mental health need in school is well below the national prevalence of mental health issues (3 per cent**

compared with 20 per cent), according to NHS data. Combined with our findings, this suggests that many pupils with mental health needs are not identified in school and supported effectively in a timely way.

- Overall, for suspended pupils identified as persistently absent, **more pupils were identified as persistently absent *before* their first suspension rather than *after* the first suspension**, meaning many young people who are already missing out on or disengaged from education then go on to be suspended.
- **Survey evidence shows that many teachers do not feel equipped to support pupils with additional needs in their classroom.**

Policy recommendations

- Given that suspended pupils are more likely to experience poor outcomes, **schools should proactively identify those at risk of suspension and plan early intervention to reduce the need for suspension.** This could include seeking and using all available information on children across school phases, including prior attainment in year 6, SEND status including for those without an EHCP, attendance history, and previous disciplinary action.
- **More research is needed to understand the drivers behind the recent rise in suspension rates in secondary school.** Young people's mental health has been worsening for a decade, and particularly since the pandemic. Rates of persistent and severe absence have risen in the same period. School sanctions may compound challenges that vulnerable young people already face. This research could inform more effective interventions that address the out-of-school drivers of suspensions and therefore reduce the need for suspension.
- **DfE should work with Ofsted to ensure that pupils who are suspended have access to high quality education.** In 2023, the government published the SEND and AP improvement plan which would go some way toward addressing this; this plan included the rollout of a local and national inclusion dashboard, to inform decision-making and drive self-improvement across the system, as well as a bespoke AP performance framework. Implementation of the plan is ongoing, yet as of December 2023 a public version of the new inclusion dashboard had not yet been launched. Given the upcoming general election, the extent to which this and other commitments will be delivered is unclear.
- **Schools and colleges must be equipped to recognise pupils with mental health and other additional needs.** Schools and colleges are in a unique position to identify problems early and facilitate targeted intervention. Given the link we found between social, emotional, mental health needs and suspensions, it is vital that schools have sufficient resources and teachers are equipped with the skills to recognise mental health issues and be able to work closely with healthcare professionals, so pupils are referred on to appropriate services. This could be enabled by the Mental Health Support Teams which are currently being rolled out across the country.

Introduction

In this report, we explore the relationship between suspensions in secondary school and outcomes for pupils in England, including GCSE grades, type of provision in year 11, the identification of special educational needs and disabilities, and levels of persistent absence.

Schools can deploy a range of sanctions to manage pupil behaviour.¹ These sanctions can vary in severity and duration, ranging from a verbal reprimand and detention all the way up to a suspension and in the most serious cases, a permanent exclusion. Currently, there is a lack of data on how this 'continuum' of sanctions is used and what their associated consequences are. The Department for Education (DfE) primarily publishes information on two specific types of sanctions:²

- Permanent exclusions, or when a pupil is expelled and cannot return to that school unless the exclusion is overturned.
- Suspensions, previously known as 'fixed period exclusions', which refer to when a pupil is excluded from the school premises for a set period of time. A pupil may be suspended for up to a maximum of 45 school days across the academic year, including any suspensions incurred at a previous school.

Given the differences in the severity and duration, it is important to study the effectiveness of these sanctions in managing behaviour as well as balancing their associated consequences in order to inform an effective behaviour management policy. As stated in the Timpson Review of Exclusions, "[w]hile exclusion is an important component of effective behaviour management in schools, outcomes of excluded children are often poor. It is therefore right that headteachers carefully consider when this is the right choice or if there are other, more effective, ways to address the underlying causes and put in place the support a child may need to improve their behaviour, without the need to exclude".³

Research studies in this area have largely focused on the consequences of experiencing permanent exclusion; these studies have highlighted negative associations with academic attainment, income, health and wellbeing, as well as interactions with the criminal justice system.⁴

Absent from the picture has been a focus on the effects of suspensions. Permanent exclusions are, ultimately, still rare events. According to the latest government data, four permanent exclusions were issued for every 10,000 pupils in the autumn 2022/23. However, 296 suspensions were issued for every 10,000 pupils in the same period. The latest data also highlighted that the suspension rate was highest in secondary schools, where 590 suspensions were issued for every 10,000 pupils.

Figure 1 shows suspension rates by school type over time. Suspension rates in secondary schools decreased between the academic years 2006/07 to 2013/14, followed by an increase until the onset

¹ Department for Education, 'Behaviour in Schools Advice for Headteachers and School Staff'.

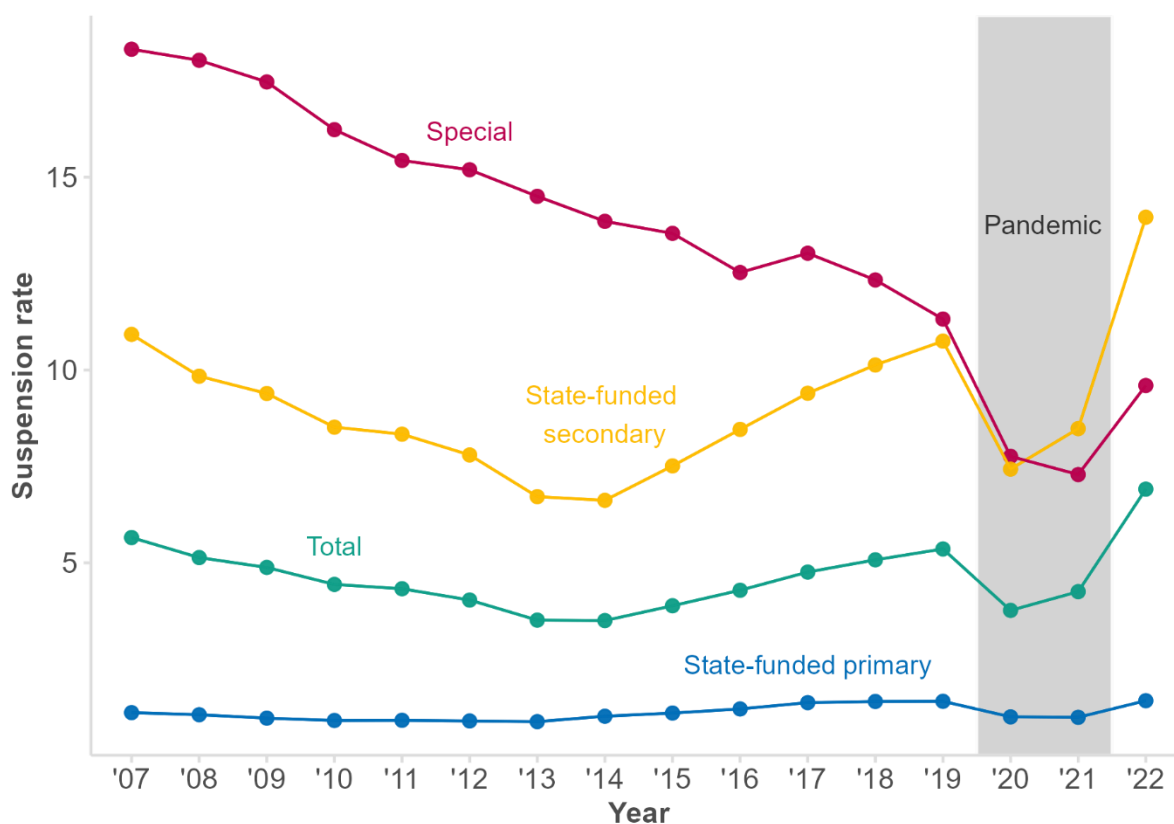
² DfE also collect data on lunch time exclusions, where pupils are excluded from the school premises for the duration of the lunchtime period, but these figures are not published publicly.

³ Timpson, 'Timpson Review of School Exclusion'.

⁴ Cathro, Tagliaferri, and Sutherland, 'School Exclusions and Youth Custody'; Strand and Fletcher, 'A Quantitative Longitudinal Analysis of Exclusions from English Secondary Schools'; Madia et al., 'Long-Term Labour Market and Economic Consequences of School Exclusions in England'; Obsuth et al., 'The Impact of School Exclusion in Childhood on Health and Well-Being Outcomes in Adulthood'.

of the pandemic. Subsequently, there was a further rise in suspension rates in secondary schools following the pandemic.

Figure 1: Suspension rate by school type



Source: Suspensions and permanent exclusions in England, Explore Education Statistics
 Notes: Suspension rate = Total number of suspensions / Total number of pupils x 100

Given the difference in the likelihood of experiencing a suspension versus a permanent exclusion – whilst also acknowledging that suspensions are for a fixed amount of time – it is worth investigating whether the impact of a suspension on a pupil’s life outcomes may be different to that of a permanent exclusion.

Additionally, the impact of suspensions has largely been studied in an American context. The strength of the relationship between multiple suspensions and outcomes in the English context is unclear. Still, a meta-analysis of the international evidence – notably of studies from only the United States (96.2 per cent) and Australia (3.8 per cent) – suggested a negative correlation of -.24 between ‘out-of-school’ suspensions and academic achievement.⁵ Additional outcomes have also been negatively affected including attendance and course completion rates.⁶

Although there is no reason to believe that there would not also be negative outcomes associated with suspensions in England, how *much* they affect academic outcomes is unknown. The purpose of this report is not to make a value judgment on whether school suspensions are good or bad so much as to quantify and lay out the extent to which experiencing *multiple* suspensions is related to pupil outcomes including school (GCSE) attainment, risk of not being in a mainstream school, risk of

⁵ Noltemeyer, Ward, and Mcloughlin, ‘Relationship Between School Suspension and Student Outcomes’.

⁶ Chu and Ready, ‘Exclusion and Urban Public High Schools’.

permanent exclusion, identification of Special Educational Needs and Disability (SEND) status, and absence trajectories.

This research investigates two questions in an English context:

- How are multiple suspensions related to academic attainment?
- How are multiple suspensions related to pupils' wider educational outcomes including type of provision by the time they sit exams, risk of permanent exclusion, identification of SEND, and absences?

To answer the first question, we summarised the relationship between multiple suspensions and GCSE grades. This involved presenting an overall picture of the association through descriptive statistics and correlation coefficients. As the factors which put some pupils at risk of a suspension also influence the risk of low attainment at GCSE – e.g. socio-economic disadvantage – it can be challenging to disentangle the effects of a suspension on GCSE grades from those associated with other vulnerabilities in a pupil's life. Therefore, we also employed a multilevel modelling to better isolate the role of suspensions in GCSE grades specifically. This second step allowed us to move beyond simple mean averages and better understand the unique contribution of suspensions to GCSE grades after accounting for other relevant factors.

To answer the second research question, we descriptively mapped out outcomes for suspended pupils by the end of secondary school, focusing on provision type by the time pupils are in year 11, the number of suspended pupils who go on to experience a permanent exclusion, the number who go on to be identified with a special educational need including being assessed for an Education, Health and Care plan, and lastly, how levels of absence change following a suspension.

Method

Building the cohort

We used the National Pupil Database (NPD) to analyse our research questions. The NPD is a rich, per-pupil level, longitudinal administrative data source that follows children registered in English state schools across their time at school. It gathers information on various factors including demographic characteristics, as well as information about exam results, exclusions, and attendance.⁷

From the NPD, we used the termly school census files to analyse a cohort of pupils who started year 7 in September 2014 in a state school. We followed their progress throughout secondary school until year 11, when they took their GCSEs in summer 2019. We identified and selected pupils based on whether their national curriculum year matched the calendar year. For example, if a pupil was in year 7 in 2015, they would be in year 8 in 2016, and so on. This approach allowed us to keep track of pupils joining and leaving our cohort over time. The termly school census files contain comprehensive data on demographics. Together these provided a range of explanatory variables for our descriptive statistics and multilevel modelling. In sum, we use a longitudinal, cohort design – spanning 15 school terms in total – to address our research questions.

In case suspensions had an impact on the likelihood of a pupil exiting a mainstream school, we also merged in data from the alternative provision (AP) census. This meant we included pupils who were initially part of our cohort but later moved to alternative provision by year 11. Since the AP census is annual and does not provide information on a pupil's national curriculum year, we used the pupil's birth month and year along with the calendar year (2019) to estimate their enrolment status when they would have been in year 11. Using this information, we then merged their records if they had previously been part of our cohort.

Records were matched across data sources, terms and years. Duplicate records for the same time period and census type were deleted based on file order to produce no more than one record per pupil at one point in time. It is possible to have records from the school census and AP census for the same child where they have been dual-registered; these records are retained in the analysis.

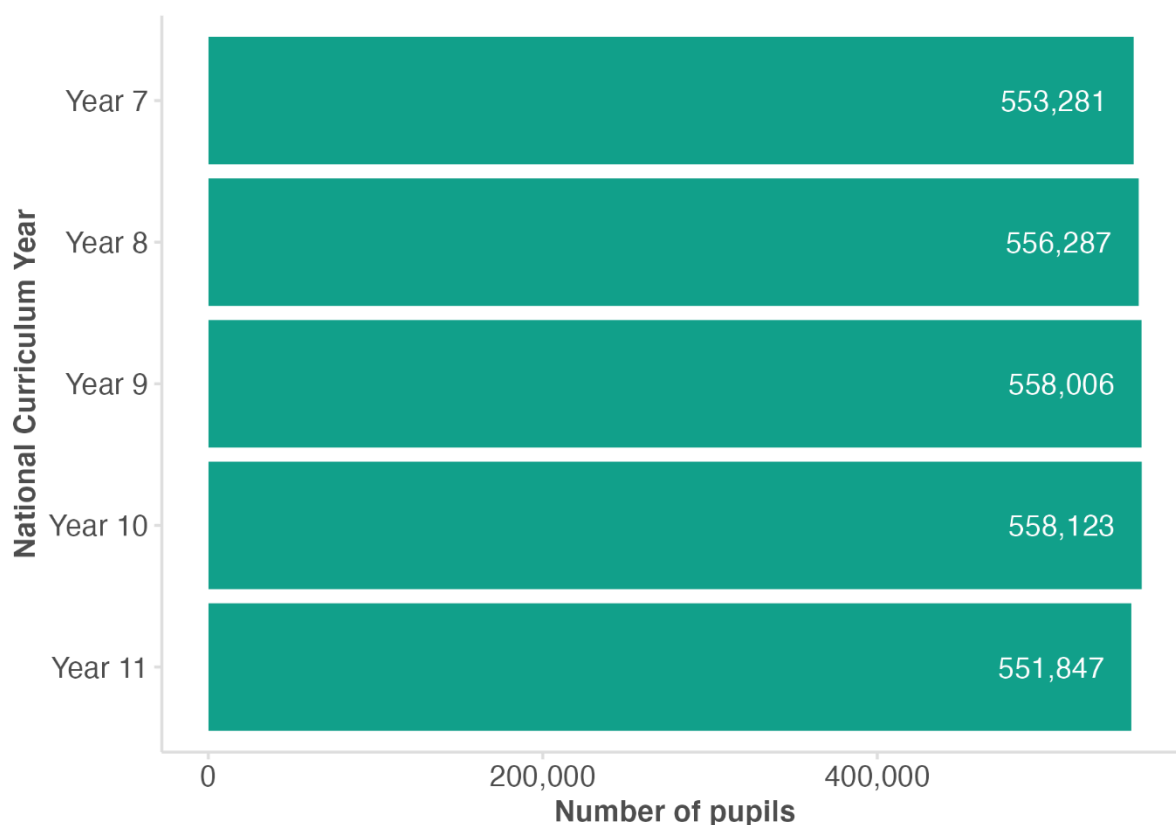
From there, data on attainment, suspensions, permanent exclusions, and absences were merged into the dataset linked to pupils in the cohort.

Demographic data

585,827 pupils were recorded at one or more censuses. Figure 2 shows that the number of pupils registered in a state school varies year on year, reflecting pupils joining and leaving our cohort over time.

⁷ Jay, Grath-Lone, and Gilbert, 'Data Resource'.

Figure 2: Number of pupils registered in a state school



Spring Census registration figures from 2015-2019; this does not include pupils in Alternative Provision

Figures available in this report may not be directly comparable to those available in national statistics as definitions and inclusion criteria may differ. Additionally, figures may differ since we analysed one specific *cohort*, rather than a time series of *all* pupils. In sum, it is important to remember that these figures are for a cohort (and thus per pupil) rather than per-suspension. For a summary table of the demographics of the cohort, see Appendix A.

Measures

As we were interested in the effects of multiple suspensions, we looked at the total number of suspensions pupils experienced during secondary school. Table 1 summarises how we measured the outcomes laid out in our research questions. For further information regarding how we measured these outcomes, see Appendix B.

Table 1: Outcomes explored in this report

Measure	How did we measure this?
Attainment	Average GCSE grade in English and maths (9-1)
School destinations by year 11	School type by the time the pupil sits their GCSE exam (e.g. Academy, Pupil Referral Unit)
Permanent exclusion	Flag for whether a pupil was ever permanently excluded
Identification of SEND	Flag for whether a pupil was identified as SEND, including whether they had a statement/plan, using their most recent status

Absences	Flag for whether they were considered 'Persistently Absent' – i.e. missing 10 per cent of sessions
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To protect individual pupils, we did not report results based on 10 or fewer pupils. We took steps to prevent secondary disclosure, where values can be re-calculated (e.g. differenced) and in turn identify individual pupils, including using different maximum values for the number of suspensions (i.e. 10+ suspensions, 15+ suspensions, 20+ suspensions) in different charts.

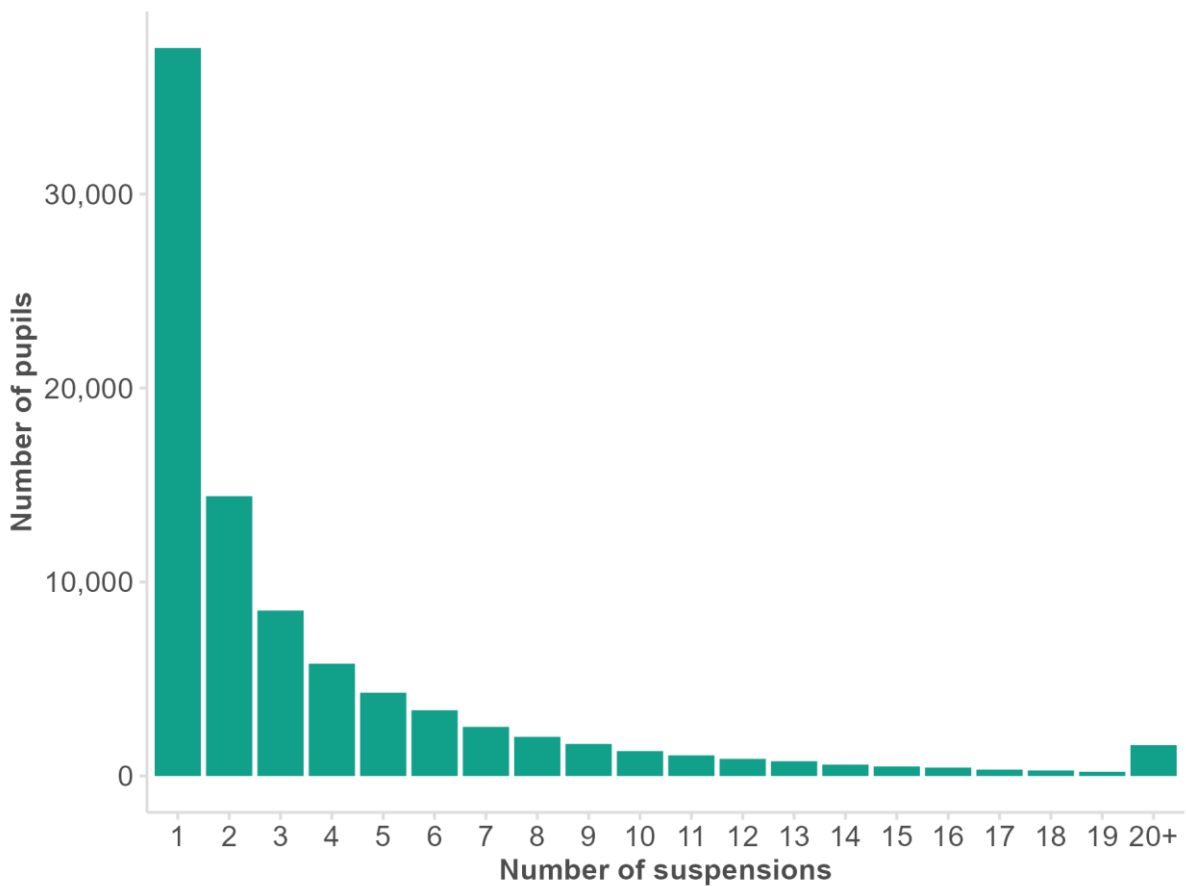
Results

The majority of suspended pupils have one or two suspensions

We first explored the frequency of suspensions in this cohort of pupils. 88,070 or 15 per cent of pupils were suspended at least once. This means that most pupils in our cohort were not suspended. It is important to remember that the figures presented in this report refer to small numbers of pupils.

Of pupils who have been suspended, 43 per cent had been suspended once and 59 per cent had been suspended once or twice. Figure 3 shows that the number of pupils who experience multiple suspensions sharply decreases as the number of suspensions increases.

Figure 3: Total number of suspensions over a pupil's time at secondary school



The sharp decline in the number of pupils experiencing multiple suspensions may suggest that suspensions ‘work’ as close to half (43 per cent) do not get suspended again. However, over half of pupils (57 per cent) who experienced one suspension went on to experience an additional suspension. Over four in five pupils (84 per cent) who experienced ten suspensions went on to experience an additional suspension. One possible interpretation of this finding is that past misbehaviour (which resulted in a suspension) may predict future misbehaviour.⁸ This highlights the importance of early intervention, before any suspensions occur, to prevent both the need for suspension and to prevent the first few suspensions from happening. Our findings suggest that

⁸ Strand and Fletcher, ‘A Quantitative Longitudinal Analysis of Exclusions from English Secondary Schools’.

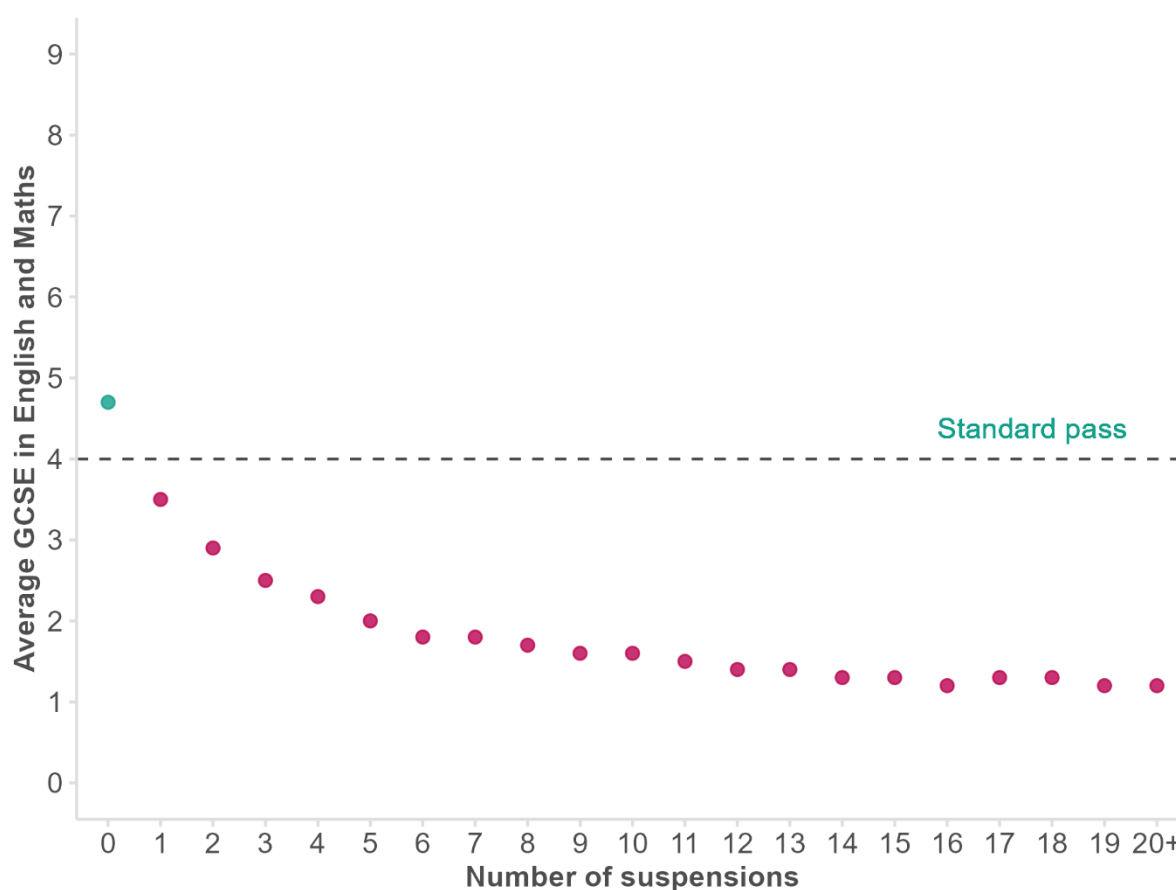
waiting until the first few suspensions to intervene may be less effective in reducing the likelihood of future suspensions.

Pupils with multiple suspensions have lower GCSE grades

We measured academic attainment through pupils' average GCSE grade across English language and maths, as success in these two subjects serves as an important pillar for progression to further study and employment. We used the 9-1 grading system, where grade 4 is considered a standard pass.

On average, as the number of suspensions increases, pupils' attainment in GCSE English and maths decreases. The relationship between the number of suspensions and GCSE grades, although decreasing, is not linear. This can be seen in Figure 4. In fact, after 10 suspensions, there appears to be a 'flattening of the curve' such that a pupil's average grade does not decrease as rapidly. Note, however, that even pupils with just one suspension are, on average, not achieving a standard pass.

Figure 4: Mean GCSE grade by number of suspensions



As Figure 4 indicates, there was a significant negative correlation (-0.34) between the number of suspensions and GCSE scores.⁹ Similarly, there was a negative correlation of -0.34 between the number of sessions missed due to suspensions and GCSE scores.¹⁰ Compared to a meta-analysis of

⁹ Correlations reported as Spearman's rank correlation coefficient due to monotonic but not strictly linear relationship. For comparison, the Pearson correlation coefficient was -0.28.

¹⁰ As above. For comparison, the Pearson correlation coefficient was also -0.28.

the international evidence, which found that the correlation between ‘out-of-school suspensions’ and attainment was -0.24, our findings suggest the correlation is stronger in an English context.¹¹

The effects were larger when we compared pupils who were suspended at least once and pupils who were never suspended (see Table 2).¹² Using the Education Endowment Foundation’s conversion tables, this meant that suspended pupils were, on average, approximately 12 months behind their not-suspended peers.¹³

Table 2: Mean GCSE grade and effect size by pupil's exclusion status

Pupil's exclusion status	Mean GCSE grade	Effect size
Suspended	2.78	-1.02sd
Never suspended	4.72	
Permanently excluded	1.43	-1.67sd
Not permanently excluded	4.46	

It is important to remember that we cannot claim that suspensions *cause* lower attainment. Several factors can influence the risk of being suspended as well as the risk of low attainment (e.g. socio-economic disadvantage). Therefore, it can be challenging to disentangle the effects of a suspension from those associated with other vulnerabilities in a pupil’s life.

Still, we wanted to move beyond mean averages and closer to the ‘impact’ of suspensions on attainment. By employing multilevel modelling, we can better isolate and understand the influence of suspensions specifically on GCSE grades for two reasons. Firstly, multilevel modelling considers that pupils within the same school may be more likely to be similar in certain aspects compared to pupils in different schools. For instance, pupils within the same secondary school may share common experiences (e.g. the same behaviour policy or a headteacher’s approach to exclusion) which distinguish them from pupils in other secondary schools. Secondly, as mentioned, a pupil’s characteristics may be linked to higher odds of receiving a suspension, which, in turn, leads to poor attainment. Therefore, multilevel modelling helps us calculate the effect of suspensions, or the ‘net-effect’ of a suspension, after accounting for the potential influence of child-level and school-level influences on a pupil’s GCSE grades. For further details regarding our approach to modelling, variable selection, and regression tables, see Appendix B.

As before, Figure 5 shows the negative relationship between the number of suspensions and GCSE grades. The effects of multiple suspensions are identified relative to the reference category of zero suspensions. As the numeric measures (including our outcome measure, average GCSE grade in English and maths) were standardised with mean zero and a standard deviation of one, our results show the effect sizes in standard deviation units of experiencing *n* number of suspensions *compared* to zero suspensions.¹⁴ In our unadjusted model, compared to pupils with no suspension, pupils with one suspension scored, on average, 0.53 SDs lower, pupils with ten suspensions scored 1.1 SDs lower, and pupils with 20+ suspension scored 1.3 SDs lower. In the model with all covariates, this decreased to -0.29, -0.66 and -0.77 SDs respectively. In other words, the effect size of multiple

¹¹ Noltemeyer, Ward, and Mcloughlin, ‘Relationship Between School Suspension and Student Outcomes’.

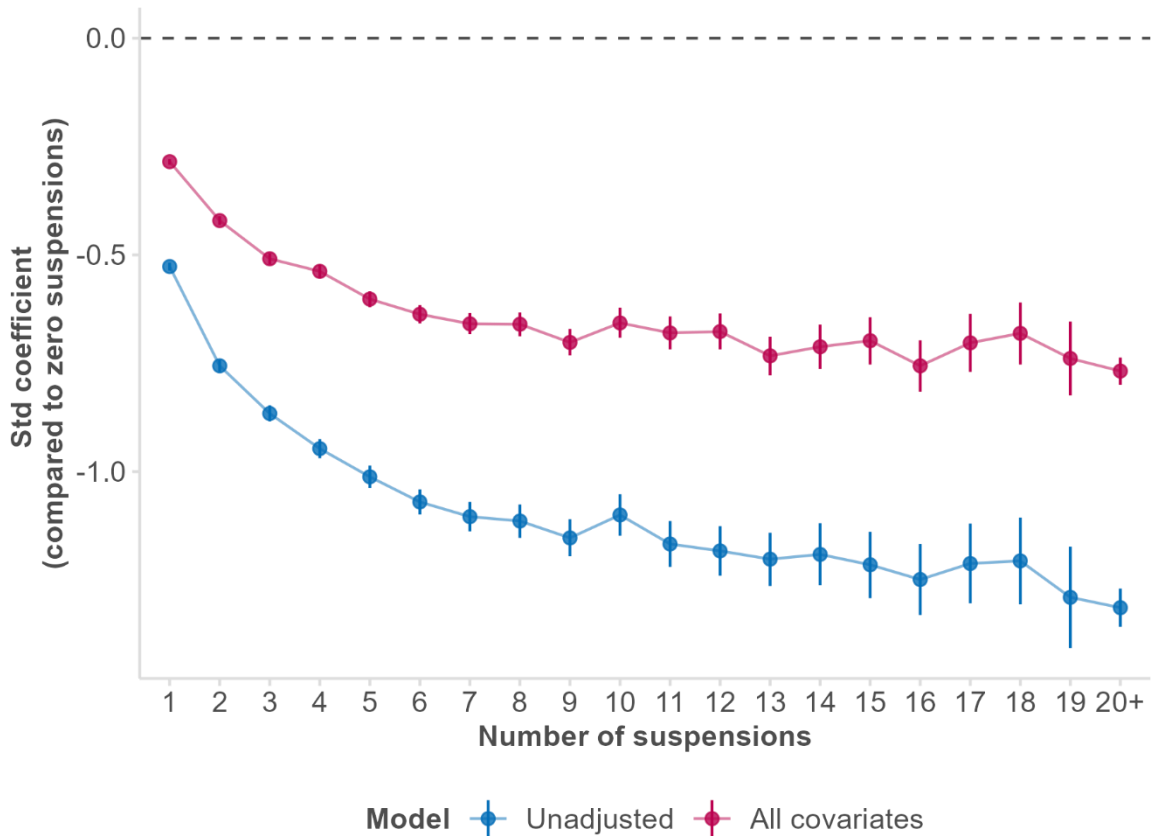
¹² The mean difference was statistically significant, $t(118406) = -278.3, p = < .001$; Cohen’s *d* used as the effect size measure

¹³ Education Endowment Foundation, ‘Teaching and Learning / Early Years Toolkit Guide’.; this figure is not directly comparable to our previous gap analyses – e.g. our annual disadvantage gap report - which uses a different methodology to convert gaps into months.

¹⁴ Effect sizes are commonly used to enable a degree of comparability between our results and other studies.

suspensions and GCSE grades reduced by between 40 and 45 per cent after we adjusted for individual and school factors. This suggests that a pupil’s characteristics, including their lower attainment at KS2, play a large part in both experiencing multiple suspensions in secondary school and poorer GCSE outcomes. Lastly, the fact that the coefficients remained large and statistically significant suggests that unobserved characteristics of suspended pupils – e.g. their actual behaviour in the classroom – may also drive low attainment.

Figure 5: A coefficient plot that shows the relationship between the number of suspensions and GCSE grades

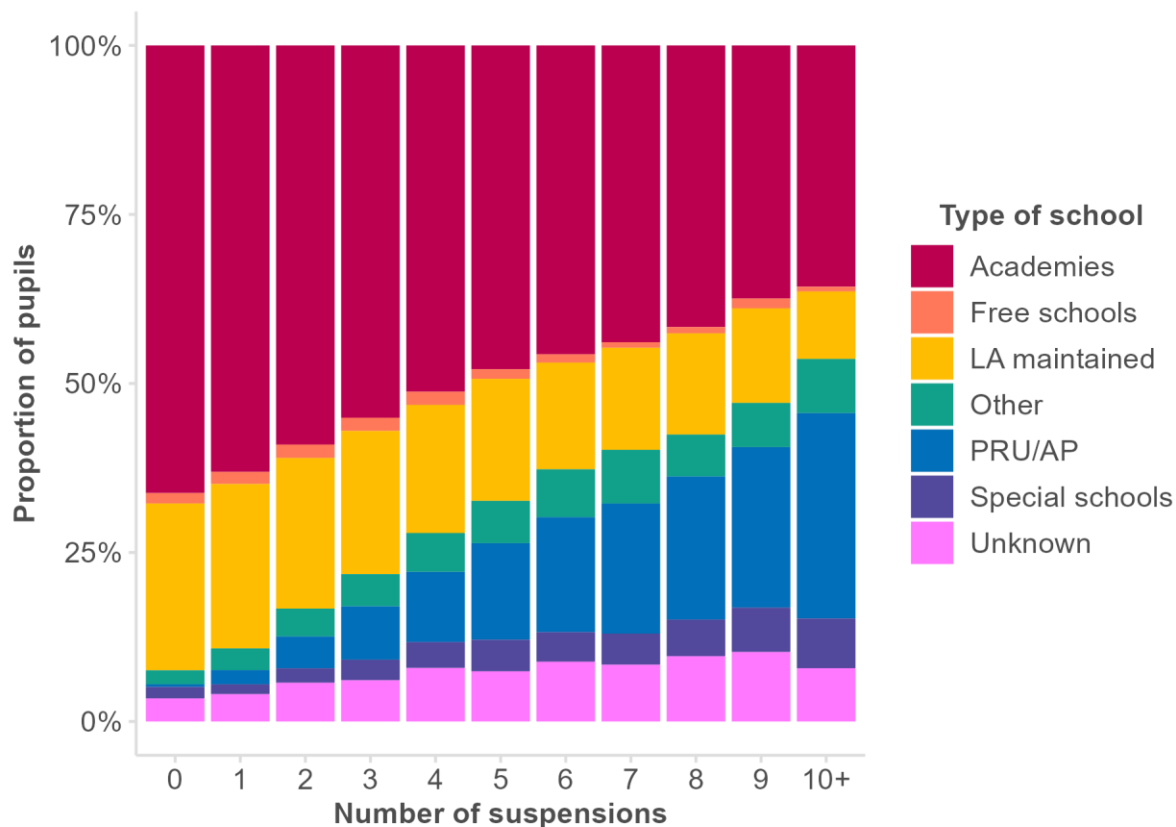


Overall, multiple suspensions were significantly negatively associated with academic attainment. After accounting for other factors, including demographics, socio-economic disadvantage, prior attainment and school characteristics, the effect of multiple suspensions on attainment was reduced by approximately 45 per cent, yet remained significant and stark. Although we cannot be certain that the suspensions caused the low attainment, we nonetheless found that pupils with even one suspension are, on average, not achieving a standard pass in GCSE English and maths.

Pupils with multiple suspensions are less likely to be in a mainstream school

We also investigated the relationship between experiencing multiple suspensions and school type by the time pupils sit their GCSEs, as shown in Figure 6.¹⁵ The proportion of pupils in academies and LA-maintained schools decreased as the number of suspensions increased. This was offset by an increasing proportion of pupils in a pupil referral unit (PRU) or alternative provision (AP), and to a lesser extent, in a special school. In fact, 30.4 per cent of pupils who were suspended 10 times were in a PRU or AP compared to 0.4 per cent of pupils who were never suspended.

Figure 6: The relationship between multiple suspensions and type of school by year 11



PRU = Pupil Referral Unit; AP = Alternative Provision

The ever-increasing proportion of suspended pupils in AP is perhaps not surprising for three reasons. Firstly, pupils can be placed in AP as a result of “education arranged by schools for pupils on a fixed period exclusion and pupils being directed by schools to off-site provision to improve their behaviour”.¹⁶ Secondly, multiple suspensions, as we explore later in

Figure 7, are related to increased risk of permanent exclusion (though not exclusively) and alternative provision is required to be arranged by local authorities for pupils who have been

¹⁵ This was based on the ‘Institution Type’ variable, available in the exams data, not the school URN used in the multilevel models. We categorised the school types into seven groups: academies (sponsored and converter academies), local authority maintained schools (e.g. community schools, foundation schools etc.), free schools (mainstream), PRU/AP, other (e.g. city technology colleges, studio schools, university technical colleges, further education colleges with provision for 14-to-16 year olds etc.) and unknown (i.e. missing data).

¹⁶ Department for Education, ‘Alternative Provision Statutory Guidance for Local Authorities’.

permanently excluded. Lastly, given the link between suspensions and social, emotional, or mental health (SEMH) needs, it is perhaps not surprising that pupils are placed in AP if they are unable to attend a mainstream school *due* to their social, emotional, or mental health need.

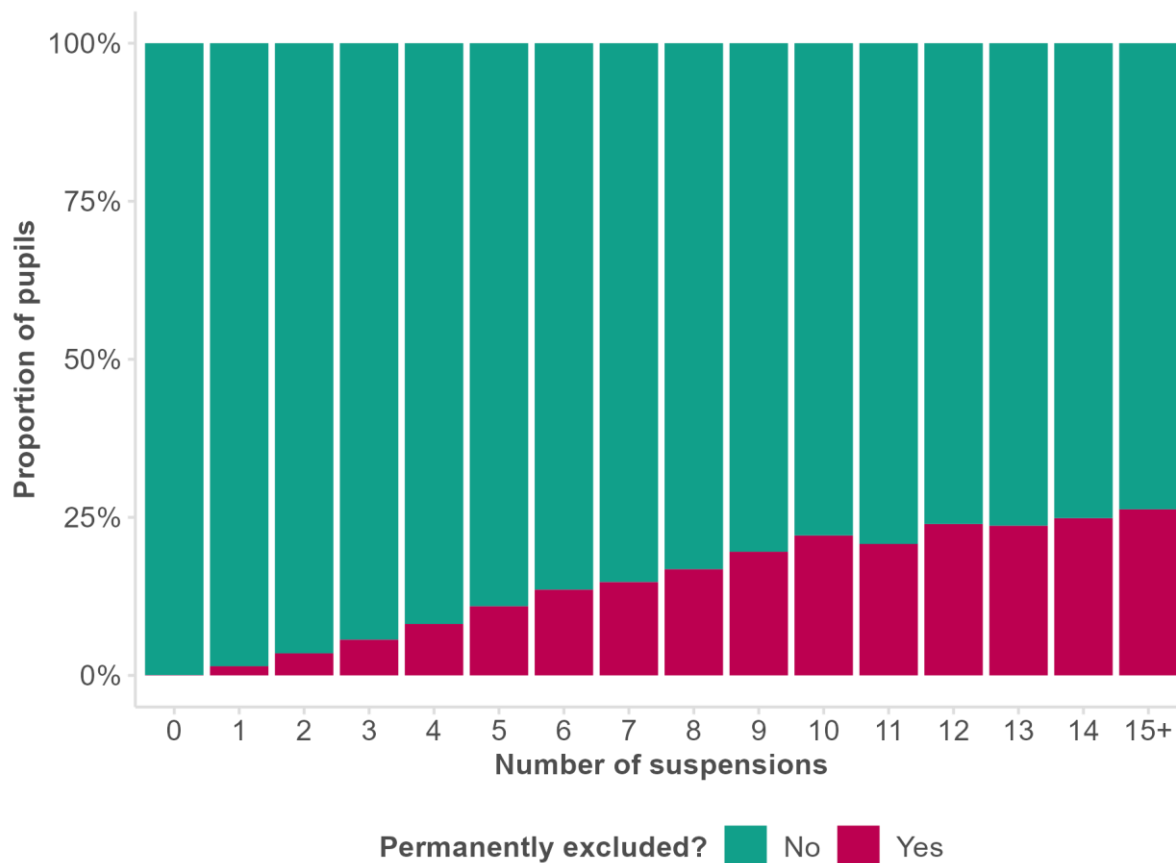
A more concerning finding is the increased – yet relatively small – proportion of pupils who were not registered in a school in year 11. The NPD does not track the reasons pupils leave school rolls, but we found that 7.9 per cent of pupils who were suspended 10 times were not registered in a school compared to 3.4 per cent of pupils who were not suspended. This suggests that they may not have been registered in a school in England by the time of their GCSE exams. This is concurrent with other evidence which found that pupils who disappear from the school census experienced, on average, a greater number of suspensions.¹⁷

¹⁷ Strand and Fletcher, 'A Quantitative Longitudinal Analysis of Exclusions from English Secondary Schools'.

Multiple suspensions are a risk factor for permanent exclusions

Next, we investigated the relationship between experiencing multiple suspensions and being permanently excluded, as seen in Figure 7.¹⁸ The proportion of pupils who were permanently excluded increased with an increasing number of suspensions. In fact, 22.1 per cent of pupils who were suspended 10 times were permanently excluded compared to 0.1 per cent of pupils who were never suspended. For pupils with 15+ suspensions, more than one in four (26.3 per cent) were permanently excluded.

Figure 7: The relationship between experiencing multiple suspensions and permanent exclusion



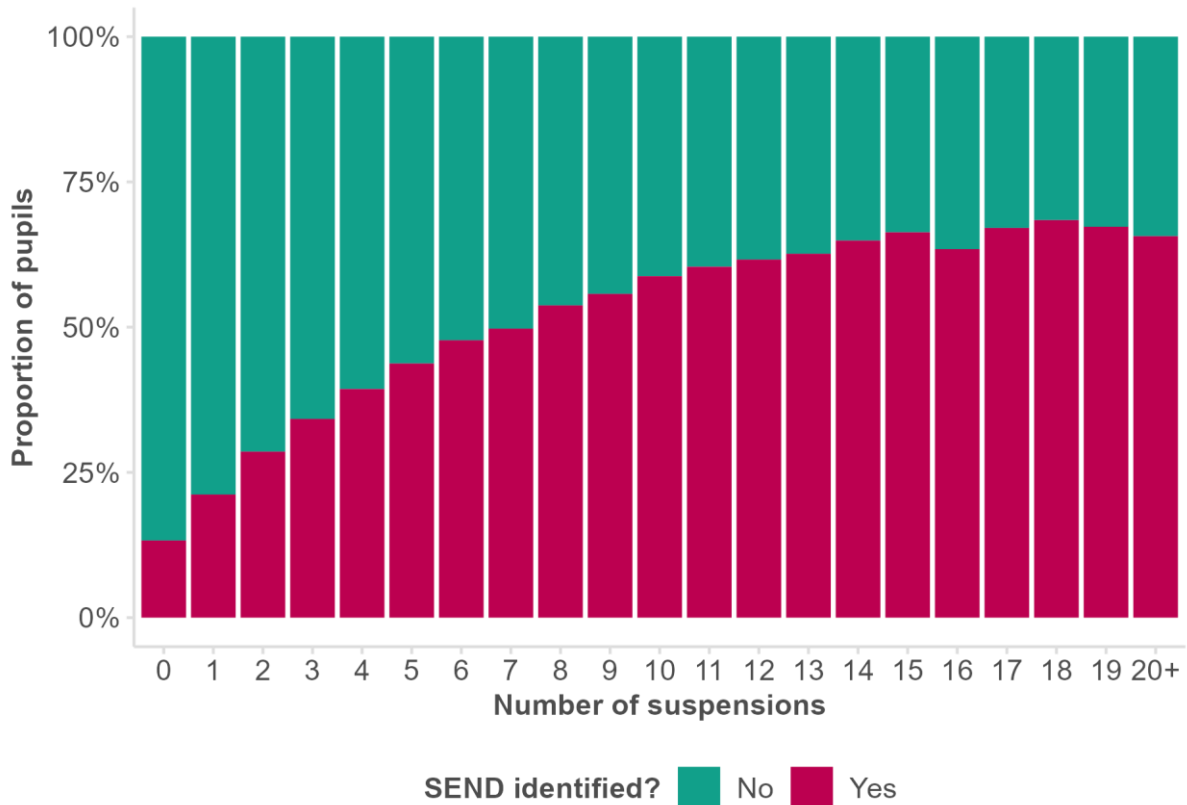
¹⁸ This was based on a variable of ever being permanently excluded. It is technically possible that pupils were permanently excluded multiple times or were permanently excluded before their suspension – though only 272 pupils (0.05%) of pupils were permanently excluded with no suspensions.

The relationship between suspensions and additional needs

We also investigated the relationship between experiencing multiple suspensions and being identified with a Special Educational Need and Disability (SEND), as seen in Figure 8. SEND status in this section was based on a pupil's most recent recorded SEND status. The proportion of pupils identified with SEND increased with an increasing number of suspensions. In fact, over half of pupils (58.8 per cent) who were suspended 10 times were identified with SEND compared to 13.3 per cent of pupils who were never suspended. For pupils with 20+ suspensions, almost two-thirds (65.7 per cent) were identified with SEND.

This pattern mirrors the relationship between the number of suspensions and attainment, as seen in Figure 5, in which grades decrease as the number of suspensions increase, but not in a strictly linear fashion. In this case, after 15 suspensions, there appeared to be a 'flattening of the curve' such that the proportion identified with SEND did not increase as rapidly.

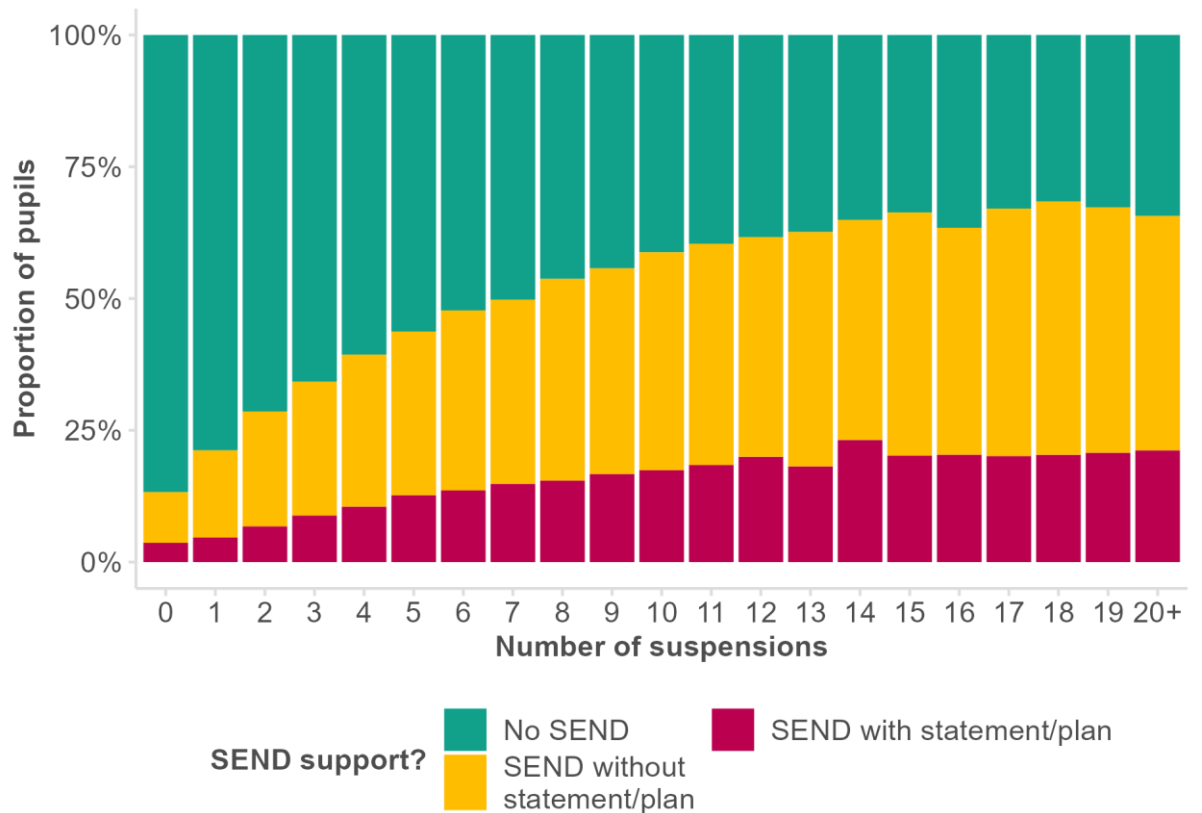
Figure 8: The relationship between multiple suspensions and SEND status



SEND = Special Educational Needs and Disabilities

We replicated this finding amongst SEND pupils with an Education, Health and Care plan (previously known as a statement) and those without one, shown in Figure 9. The proportion of pupils identified with SEND with a statement/plan increased with an increasing number of suspensions. In fact, 17.5 per cent of pupils who were suspended 10 times had a statement/plan compared to 3.7 per cent of pupils who were never suspended. For pupils with 20+ suspensions, more than one in five (21.2 per cent) had a statement/plan.

Figure 9: The relationship between multiple suspensions and SEND status (split by statement/plan v no statement/plan)



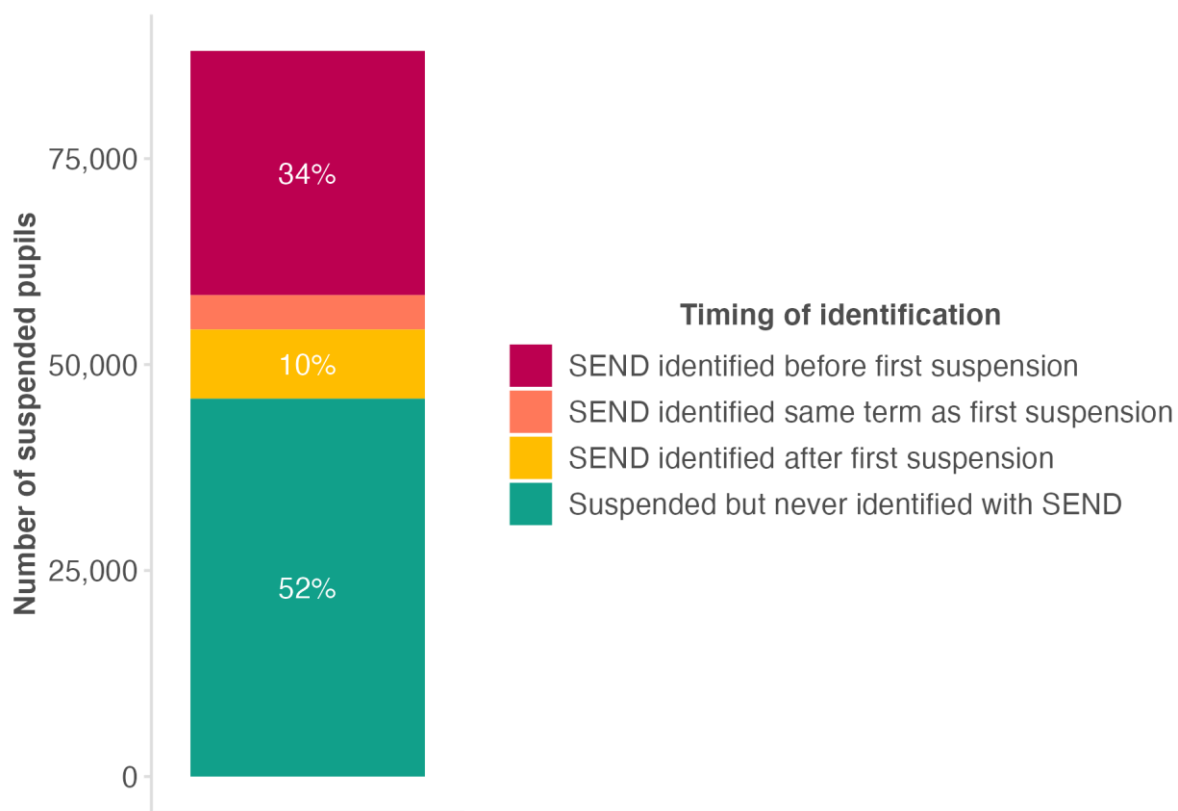
SEND = Special Educational Needs and Disabilities

We were also interested in understanding the timing of identification of additional needs relative to experiencing suspension. By analysing when pupils were identified with additional needs in relation to when they experienced their first suspension, we can determine whether those with additional needs received support before facing disciplinary action or vice versa.

To this end, we exploited the termly and yearly nature of data; each school census provides the pupil's SEND status, primary SEND need, absences, and the number of suspensions either termly or annually. This allowed us to identify the number of pupils who were identified with SEND or had a high rate of absence in secondary school before their *first* suspension, the number of pupils who were identified as such in the same time period as their first suspension, and the number of pupils who were identified with either SEND or high absence rates after their first suspension. The following section of the report uses slightly different variables in the analysis. For instance, these figures will vary from those reported above as the previous analysis used pupils' most recent SEND status including data from the AP census if it was available (rather than a flag for ever being identified with SEND). Additionally, data on whether a pupil has been identified with SEND is only collected annually for those in AP, unlike for pupils in mainstream schools, where it is collected termly. Furthermore, a pupil's SEND type (e.g. hearing impairment, visual impairment, etc.) is not collected via the AP census. Therefore, we limit the following three findings to data solely available in the school census for consistency. Lastly, these findings are based on data about suspensions, SEND and absences collected in secondary school and not primary school.

Figure 10 shows that over a third of suspended pupils (34 per cent) were identified with SEND before their first suspension. One in 10 pupils were identified with SEND after their first suspension.

Figure 10: The number and per cent of pupils who were suspended by timing of SEND identification



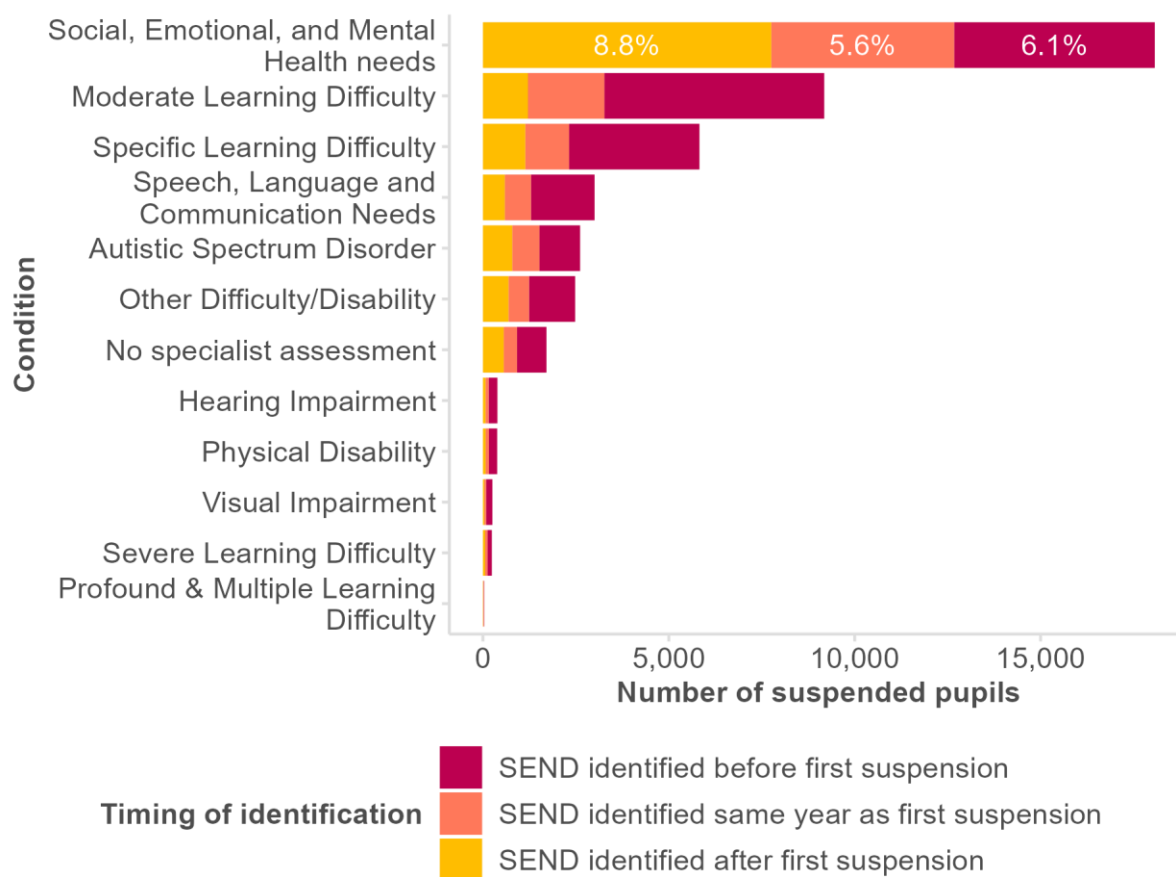
Looking at the whole cohort, 18 per cent (108,361 pupils) of the cohort had SEND but were not suspended and 26 per cent (150,574 pupils) had been identified as ‘ever’ SEND, i.e. at some point during secondary school.

Our findings show that for suspended pupils identified with SEND, more pupils were identified with SEND *before* their first suspension rather than *after* the first suspension.

Previous research has highlighted a link between exclusions (mostly permanent exclusions rather than suspensions) and mental health issues.¹⁹ We therefore extended this investigation to look at the type of SEND condition, presented in Figure 11. Figures presented in Figure 11 are the proportion of all suspended pupils.

Social, emotional, or mental health (SEMH) need is the most common type of SEND amongst pupils who experience suspension.²⁰ In this category, 6.1 per cent of suspended pupils were identified with SEMH before their first suspension and 8.8 per cent of suspended pupils were identified with SEMH problems after their first suspension.

Figure 11: The proportion of suspended pupils by timing of SEND identification



¹⁹ Ford et al., ‘The Relationship between Exclusion from School and Mental Health’; Strand and Fletcher, ‘A Quantitative Longitudinal Analysis of Exclusions from English Secondary Schools’; Tejerina-Arreal et al., ‘Child and Adolescent Mental Health Trajectories in Relation to Exclusion from School from the Avon Longitudinal Study of Parents and Children’.

We excluded pupils with Multi-Sensory Impairment as there were fewer than 10 pupils after grouping them.

Looking at the whole cohort, 3 per cent (14, 774 pupils) of the cohort had SEMH but were not suspended and 6 per cent (32, 845 pupils) had been identified as 'ever' SEMH, i.e. at some point during secondary school.

The SEMH label is likely to capture many pupils with ongoing behaviour difficulties, not least because it used to explicitly include pupils with behavioural issues.²¹ Given the links between behaviour and social, emotional and mental health, it follows that SEMH is more commonly identified amongst suspended pupils compared with other types of SEND. Nonetheless, these findings suggest that some suspended pupils who may have benefitted from additional support instead faced disciplinary action. In other words, some pupils may not have the right support in place to address their needs and, in turn, prevent suspension.

²¹ Department for Education and Skills, 'Special Educational Needs Code of Practice'; Department for Education and Department of Health, 'Special Educational Needs and Disability Code of Practice: 0 to 25 Years'.

The relationship between suspensions and persistent absence

The Office of the Children’s Commissioner (CCO) has highlighted a link between suspension and absence.²² In 2021/22, pupils with zero suspensions had a mean unauthorised absence rate of 2 per cent compared to pupils with over 18 suspensions who had a mean unauthorised absence rate of 21 per cent. Pupils with zero suspensions had a mean authorised absence rate of 6 per cent compared to pupils with over 18 suspensions who had a mean authorised absence rate of 27 per cent. CCO researchers also found that after controlling for other factors, being suspended was associated with two additional days of absence.

However, as we have explored previously, the direction of this effect is unclear. It could be that persistently absent pupils are more likely to be suspended or that pupils who are suspended are more likely to be persistently absent – with unknown factors driving both absence and suspensions. Therefore, we extended our ‘before-and-after analysis’ to whether a pupil was persistently absent.

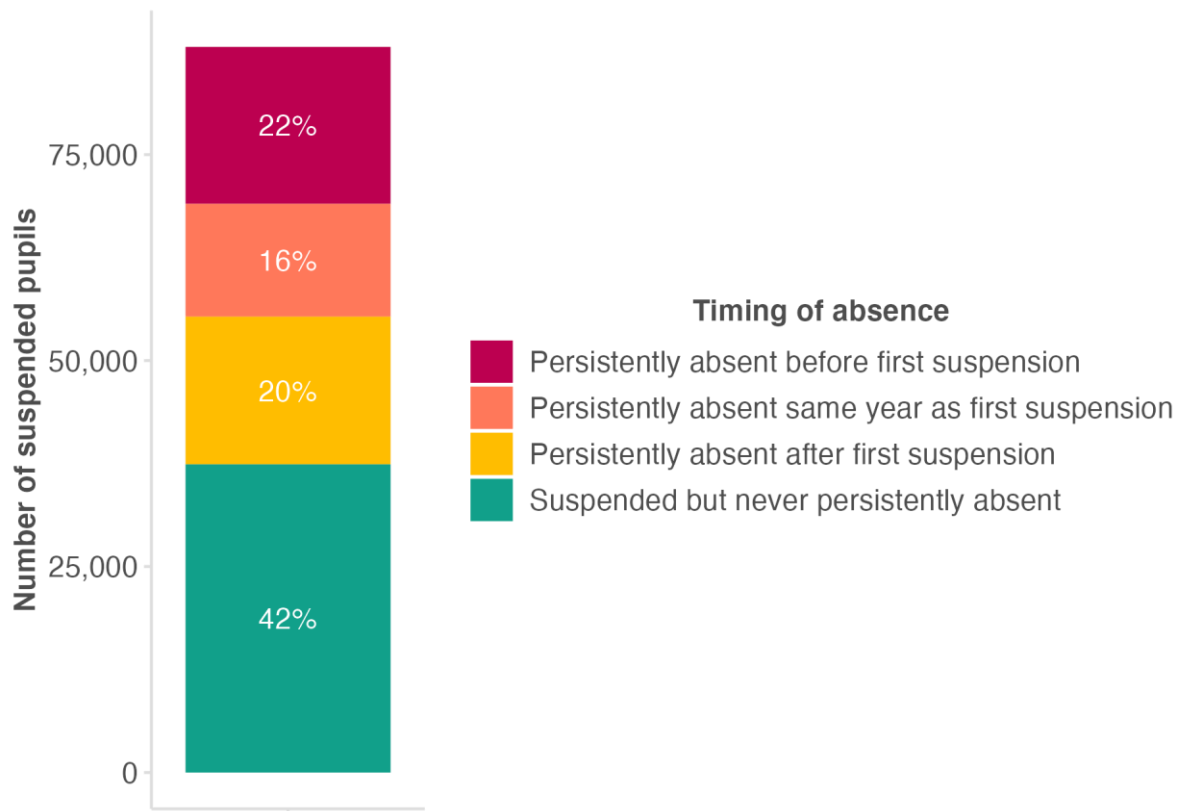
For absences, we used DfE’s threshold for persistent absentee pupils: any pupil who misses at least 10 per cent of sessions in a term for any reason. However, we did not include authorised absences related to code E, i.e. ‘sessions missed as pupil is excluded, with no alternative provision made’. Exclusions themselves can be a reason for absence and therefore including them in our analysis of the relationship between suspension and absences may introduce circularity.

Figure 12 displays the relationship between absence and suspensions. We found that 22 per cent of suspended pupils were identified as persistently absent before their first suspension, while 20 per cent of suspended pupils became persistently absent after their first suspension.

Looking at the whole cohort, 19 per cent (110, 414 pupils) were flagged as persistently absent at some point during secondary school but were not suspended and 27 per cent (161, 079 pupils) had been identified as ‘ever’ persistently absent at some point during secondary school.

²² Office of the Children’s Commissioner, ‘Education History and Attendance’.

Figure 12: The number and per cent of pupils who were suspended by timing of persistent absence flag



Overall, these findings suggest that many young people who are missing out on or disengaged from education then go on to be suspended, raising questions about what impact a suspension will have on their level of engagement in school.

Limitations of our analysis and future research

Our analysis does not employ a causal design which means we cannot rule out that the relationship between suspension and these outcomes is not driven by a common external factor. For instance, pre-existing behavioural problems may result in both suspensions and poor outcomes, although controlling for prior attainment and predictors of behaviour issues should account for some of this potential confounding. Future research could employ quasi-experimental methodologies, including instrumental variable or matching approaches, to explore the potential causal impact of suspensions on outcomes. For example, some recently published studies have used matching approaches and cohort studies, which contain rich data on young people and their families' characteristics and background, to explore the impact of permanent exclusion on health and labour market outcomes.²³

Additionally, we investigated the *number* of suspensions as the variable explaining differences in GCSE grades. Future research could investigate how the effects vary by the total number of sessions missed during a suspension and the reasons for the suspension. Additionally, researchers could also investigate how the number of sessions missed due to a suspension, the reason for suspension, and the number of permanent exclusions interact in explaining differences in GCSE grades.

Moreover, we investigated the role of 'formal' suspensions reported in DfE data. Schools can also issue 'internal exclusions'; however, data on these is not currently collected by DfE. Previous EPI research has found that the use of internal exclusion is widespread in secondary schools, and practice varies between schools.²⁴ It is possible that the effects of internal exclusion, during which pupils are kept in schools, are smaller than those of a suspension, given that a meta-analysis of the international evidence found that the correlation between out-of-school suspensions and attainment was -.24 whereas the correlation between in-school suspensions and attainment was only -.10.²⁵ Future research should seek to understand the relationship between internal exclusions and outcomes, and how this compares with outcomes for pupils who experience suspension, in order to inform effective behaviour policies. It should also compare the link between a school's official suspension rate and a school's internal exclusion rate in case the focus on published metrics has driven up the use of less overt forms of exclusion.

Lastly, little is still known about the impact of suspension and behaviour policies on others, including peers who are not suspended as well as teachers. Future research should seek to understand the wider role played by suspensions and behaviour policies, for example, on teacher retention, given that almost two-thirds of teachers have or are considering quitting over poor pupil behaviour.²⁶

²³ Madia et al., 'Long-Term Labour Market and Economic Consequences of School Exclusions in England'; Obsuth et al., 'The Impact of School Exclusion in Childhood on Health and Well-Being Outcomes in Adulthood'.

²⁴ Wielar and Hodge, 'Variation in Pupil Inclusion Practices across Schools'.

²⁵ Noltemeyer, Ward, and Mcloughlin, 'Relationship Between School Suspension and Student Outcomes'.

²⁶ Williams, 'Persistent Disruptive Behaviour in Schools and What Can Be Done about It'.

Conclusion

In this report, we explored the link between experiencing multiple suspensions and a range of outcomes, including GCSE grades, type of provision by the time pupils sit their GCSEs, risk of permanent exclusion, identification of SEND, and absence trajectories.

We extended existing research to an English context and found that suspension is strongly associated with poor attainment; the more suspensions a young person experiences, the worse their GCSE grades. This was true even after controlling for a rich set of individual-level variables (e.g. gender, ethnicity, and FSM eligibility) and school-level variables (e.g. school type and geography). These results make a strong case for the importance of early intervention, and highlight suspension, and risk of suspension, as key indicators for schools that a pupil is at risk of low academic achievement. The case for early intervention is bolstered by the knock-on impact of poor achievement in secondary school on post-16 pathways, and adult outcomes including labour market participation, earnings, and wellbeing.

Additionally, we found that a higher proportion of pupils who experience multiple suspensions also experience permanent exclusion, finish secondary school in alternative provision, and are identified with SEND, and social, emotional and mental health needs, in particular. We also found that many pupils who are persistently absent from school go on to experience a suspension; it is not clear what impact this will have on their already low level of engagement in education. Meanwhile, a large proportion of pupils with social, emotional and mental health needs who experience suspension are only identified as having SEMH after the suspension, raising questions about the effectiveness of SEND identification and whether disciplinary action is used in cases where supportive interventions may be more appropriate. Previous EPI research has highlighted substantial variation in how SEND is identified, with the school attended by the pupil the most important factor for whether or not they are identified with SEND.²⁷ Additionally, there is a large gap in the proportion of young people identified with mental health needs in NHS England's national prevalence surveys (around 23 per cent of 11-to-16 year olds) and in schools (around 6 per cent of our secondary school cohort).²⁸ This gap persists despite a rising prevalence of mental illness in young people, according to NHSE data, from one in eight in 2017 to one in five in 2023. This lack of alignment, coupled with teacher reports of feeling inadequately equipped to support students with additional needs, raises questions about whether young people with mental health needs receive timely and effective support that may help to reduce the need for suspension.²⁹

Given that suspensions in secondary school have become more common in recent years, and are strongly associated with poor attainment, young people who are suspended from school, many of whom will have an additional need or a history of persistent absence, must have access to high-

²⁷ Hutchinson, 'Identifying Pupils with Special Educational Needs and Disabilities'.

²⁸ Office for Health Improvement and Disparities, 'School Pupils with Social, Emotional and Mental Health Needs: % of School Pupils with Social, Emotional and Mental Health Needs'; Newlove-Delgado et al., 'Mental Health of Children and Young People in England, 2023.'

²⁹ Casebourne, 'Half of UK Teachers Don't Feel Confident Helping Pupils with Their Mental Health'; OECD, 'TALIS 2018 Technical Report'; Toth et al., 'From a Child Who IS a Problem to a Child Who HAS a Problem'; Waddell, 'Teachers Need Mental Health Training to Best Support Their Students'.

quality provision if they are spending multiple days out of their school. Previous research has shown that the proportion of unqualified teachers in AP is higher than in mainstream secondary schools.³⁰

Given this, EPI recommends the following:

- Given that suspended pupils are more likely to experience poor outcomes, **schools should proactively identify those at risk of suspension and plan early intervention to reduce the need for suspension.** This could include seeking and using all available information on children across school phases, including prior attainment in year 6, SEND status including for those without an EHCP, attendance history, and previous disciplinary action.³¹
- **More research is needed to understand the drivers behind the recent rise in suspension rates in secondary school.** Young people's mental health has been worsening for a decade, and particularly since the pandemic. Rates of persistent and severe absence have risen in the same period. School sanctions may compound challenges that vulnerable young people already face. This research could inform more effective interventions that address the out-of-school drivers of suspensions and therefore reduce the need for suspension.
- **DfE should work with Ofsted to ensure that pupils who are suspended have access to high quality education.** In 2023, the government published the SEND and AP improvement plan which would go some way toward addressing this; this plan included the rollout of a local and national inclusion dashboard, to inform decision-making and drive self-improvement across the system, as well as a bespoke AP performance framework. Implementation of the plan is ongoing, yet as of December 2023 a public version of the new inclusion dashboard had not yet been launched.³² Given the upcoming general election, the extent to which this and other commitments will be delivered is unclear.
- **Schools and colleges must be equipped to recognise pupils with mental health and other additional needs.** Schools and colleges are in a unique position to identify problems early and facilitate targeted intervention. Given the link we found between social, emotional, mental health needs and suspensions, it is vital that schools have sufficient resources and teachers are equipped with the skills to recognise mental health issues and be able to work closely with healthcare professionals, so pupils are referred on to appropriate services. This could be enabled by the Mental Health Support Teams which are currently being rolled out across the country.

³⁰ Gill, Quilter-Pinner, and Swift, 'Making The Difference: Breaking the Link between School Exclusion and Social Exclusion'; Centre for Social Justice, 'Warming the Cold Spots of Alternative Provision: A Manifesto for System Improvement'.

³¹ Office of the Children's Commissioner, 'Education History and Attendance'.

³² Booth, 'Schools Policies in Limbo as Government 'not Governing''.

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Appendices

Appendix A Summary statistics of cohort

Table 3: Summary statistics of cohort

Variable	n	Proportion	
Gender			
Girls	284863	48.6	
Boys	300964	51.4	
Ever EAL			
Not EAL	475803	81.2	
EAL	110024	18.8	
Ever FSM			
Not FSM	454121	77.5	
FSM	131706	22.5	
SEND (most recent status)			
No SEND	490696	83.8	
SEND	95131	16.2	
Ever SEND			
No SEND	433426	74.2	
SEND	150574	25.8	
Ever excluded			
Not excluded	579666	98.9	
Excluded	6161	1.1	
Ever suspended			
Not suspended	497757	85	
Suspended	88070	15	
School type			
Academy	378430	64.6	
Free school	9126	1.6	
Local authority maintained school	141094	24.1	
NA	22188	3.8	
Other type of school	14389	2.5	
PRU/AP	9643	1.6	
Special school	10957	1.9	
Variable	n	Mean	Std Dev
Age (months)	584000	194.50	3.57
GCSE English and maths (assuming they failed)	585827	4.27	2.18
GCSE English and maths (assuming their data is missing)	540784	4.64	1.86
GCSE English and maths (adjusted for year 11 enrolment status)	564845	4.43	2.05

Appendix B. Modelling approach

Demographic information

Our approach to extracting a pupil's demographic data depended on the variable. As pupils could join and leave our cohort, most of the pupil characteristics used data from pupils' last year in secondary school, i.e. their most recent non-missing data point, or data from the AP census if it was available. This technique is known as 'last observation carried forward' and has been frequently used in studies of child development.³³ It assumes that a variable is static (e.g. we would not expect a pupil's month of birth to change) and is used to minimise missing data. We used this technique for the month of birth, year of birth, gender, SEND, and Income Deprivation Affecting Children Index (IDACI) decile variables where we took the pupil's more recent non-missing value.

As mentioned, our method for identifying pupils to include in our cohort relied on their national curriculum year available in the school census data. To calculate a pupil's age, we used the month-of-birth and year-of-birth variables. However, inconsistencies in birth-year data (e.g. errors in reporting) created challenges for calculating a pupil's age. To address this, we first transformed the year-of-birth data by marking any year other than 2002 or 2003 as missing data. This meant that when it came to our models, analysed pupils were both the 'correct' national curriculum year *and* the 'correct' year of birth on at least one census return. Since we did not have access to a pupil's precise birthday, we assigned everyone a common day of birth (1st). We then used May 1st, 2019 (corresponding to the start of the main GCSE exam period) to calculate their age. This approach led to the exclusion of 1,827 pupils (0.3% of the cohort) from our models due to missing age data.

We also recoded some values of EAL and ethnicity variables as missing data before taking the pupil's most recent non-missing value. For EAL, we treated the code 'Unclassified' as missing data and then took the last non-missing observation. For ethnicity, we treated the ethnicity codes, 'Refused', 'Missing', 'Invalid', 'Information not yet obtained' and 'Not applicable' as missing data and then took the last non-missing observation.

We used free school meal eligibility at any point during secondary school to identify 'socio-economically disadvantaged' pupils. It is important to note that this method might not capture all disadvantaged pupils, as some eligible pupils might not access it and some disadvantaged pupils might not qualify due to specific benefits criteria.³⁴

If a pupil's ethnicity (or equally their IDACI) data was still missing after coalescing, then we coded 'NA' as a category in its own right (i.e. missing ethnicity data was dummy coded as a 'ethnicity_NA' variable when running a regression model). This is another technique used to minimise missing data and has been used in studies of child development.³⁵

We acknowledge that some variables are dynamic and do change. Therefore, FSM and EAL status were based on being flagged as such at any point during secondary school.

³³ Sammons et al., 'Influences on Children's Attainment and Progress in Key Stage 2: Cognitive Outcomes in Year 6.'

³⁴ Campbell and Cooper, 'What's Cooking? A Review of Evidence and Discussion on the Free School Meals (FSM) Measure in the National Pupil Database'.

³⁵ Sammons et al., 'Influences on Children's Attainment and Progress in Key Stage 2: Cognitive Outcomes in Year 6.'

We entered the school's unique identifier (unique reference number; URN) as the grouping variable for our multilevel models. Sometimes school identifiers change – e.g. due to academy conversion. We generated a 'stable' URN for each term using linked data from Get Information About Schools.³⁶ This version of the URN was not used to attribute any school governance information (e.g. academy, LA maintained etc.) as this can change over time. Instead, it was solely used to group pupils within each school, serving as the variable for the random intercept effects.

Exposure variable

We modelled our exposure variable, the number of suspensions, as a discrete variable. This involved discretising and dummy coding the variable to create 21 distinct categories (e.g. 0 suspensions, 1 suspension, 2 suspensions, and so forth up to 20+ suspensions).

We also explored representing the number of suspensions as both a continuous variable and a log-transformed variable. However, continuous values, such as '1.24 suspensions', lack practical meaning. Additionally, interpreting log-transformed values posed challenges due to the high number of pupils with zero suspensions. Therefore, we opted to maintain the original, discrete representation of suspensions.

Attainment measures

Currently, DfE's school accountability measures (e.g. Progress 8, Attainment 8, etc.) are calculated based on whether a pupil was enrolled at a school at the time of the January census.³⁷ Concerns have been raised around whether there are perverse incentives for schools to remove pupils – in this case, pupils who misbehave – from their school rolls so that the pupil's results are not counted towards a school's performance measures. This issue of missing data is therefore important as issues such as 'off-rolling' may skew the attainment profiles of suspended pupils. Although there is no official estimate of 'off-rolling', existing estimates vary, and proxy measures suggest it may be as high as 61,000 pupils.³⁸

Previous research of the National Pupil Database has suggested that pupils who left between year 7 and year 11 experienced significantly more suspensions specifically.³⁹ Additionally, previous EPI research indicates that 1 in 5 suspended pupils had an 'unexplained exit' and 1 in 3 permanently excluded pupils had experienced an 'unexplained exit'.⁴⁰

For this analysis, as we allowed pupils to join and leave our cohort, there were 45,043 (8 per cent) pupils with missing GCSE grades. The NPD does not track the reasons why pupils disappeared from a school census (e.g. they may have emigrated) which presented challenges as to how to treat the missing data. A pupil who emigrated in year 8 can be considered as no longer the school's responsibility, whereas a pupil who has been say, off-rolled could still reasonably be considered

³⁶ In cases where multiple URNs were linked as predecessor or successor schools, we arbitrarily selected one URN from each URN 'family' and recoded all variations to establish a 'stable URN.'

³⁷ Department for Education, 'Secondary Accountability Measures Guide for Maintained Secondary Schools, Academies and Free Schools'.

³⁸ Bradbury, 'Off-Rolling'; Nye and Thompson, 'Who's Left 2018, Part One'; Hutchinson and Crenna-Jennings, 'Unexplained Pupil Exits from Schools'.

³⁹ Strand and Fletcher, 'A Quantitative Longitudinal Analysis of Exclusions from English Secondary Schools'.

⁴⁰ Hutchinson and Crenna-Jennings, 'Unexplained Pupil Exits from Schools'.

within the remit of a school's responsibility. To account for this, we measured GCSE grades using three approaches:

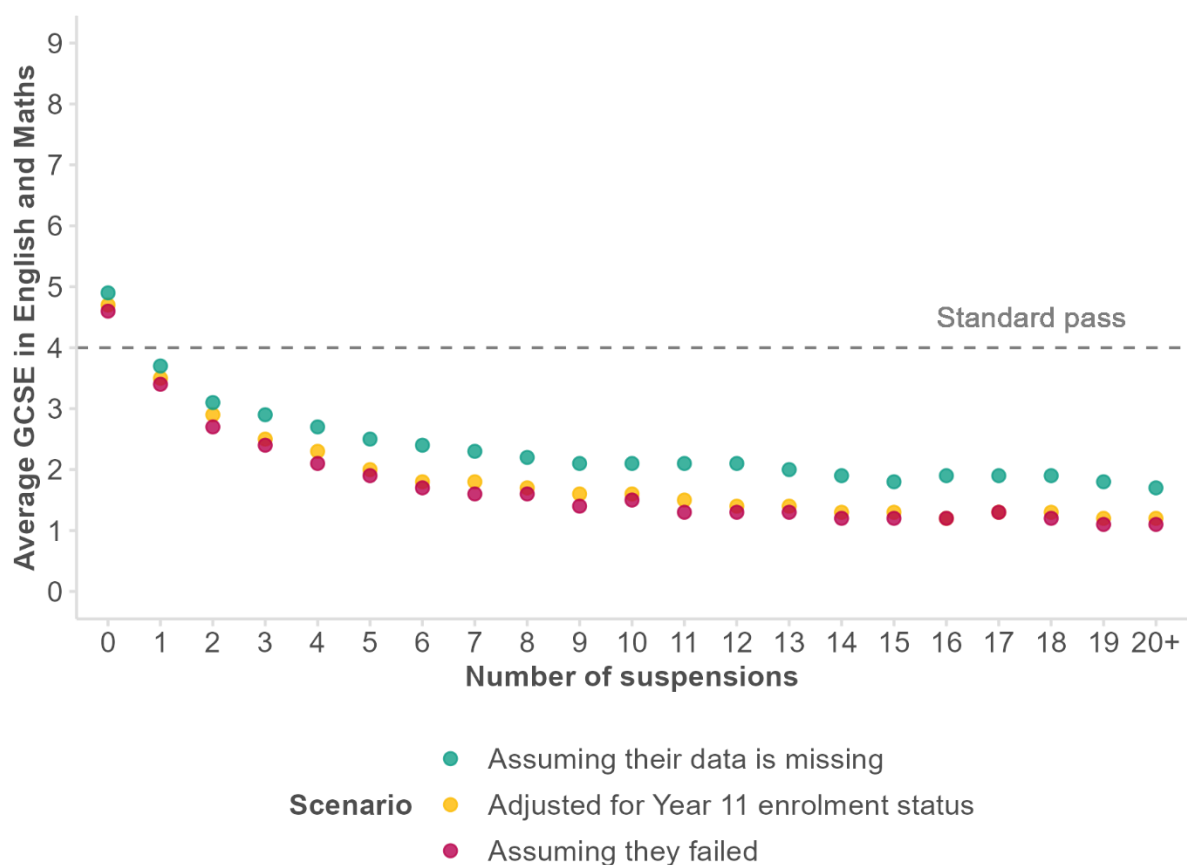
Table 4: Approaches to measuring GCSE grades

Approach	Method	Considerations	Number of pupils with missing attainment data after adjustment	Mean GCSE grade (Standard Deviation)
Assuming their data is missing	We kept any missing attainment data as missing. We then took the average of pupils' English and maths grades. Where pupils were missing one result, the average took the value of the subject for which they had a score. Where neither subject had a score, we kept their data as missing; as we used listwise deletion, these pupils were effectively not included in our analysis.	This approach drops pupils with data missing for both English and maths GCSE scores from the analysis, and assumes that pupils score the same across both subjects. It has the drawback that any summary statistics only reflect pupils with complete data – i.e. those who made it to the end of secondary school and took GCSEs. It assumes that all pupils with missing data would not have failed.	45,043	4.64 (1.86)
Adjusted for year 11 enrolment status	Missing data treatment for each subject depended on enrolment status. If a pupil was registered in the autumn or spring term of year 11 or had a record in the AP census in year 11, we replaced missing data for each subject with zero, assuming they have failed. If they were not registered in a school in year 11, we kept their data for each subject as missing. We then used the average grade.	This approach gets closer to taking into account pupils who have been 'pushed' out of the education system and do not have an English or maths qualification. At the same time, we assume that pupils not on a school roll in year 11 and missing GCSE data may have left the country. In some cases, however, this will erroneously adjust the scores of pupils who emigrated during year 11.	20,982	4.43 (2.05)
Assuming they failed	In this approach, we replaced missing data for each subject with zero. We then used the average grade.	This is the most conservative approach as all pupils missing GCSE data for whatever reason would be given a score of zero.	0	4.27 (2.18)

Unless stated otherwise, the results reported throughout reflect the measure of GCSE grades adjusted for year 11 enrolment status. This adjustment process based on a pupil’s year 11 enrolment status changes the scores of around 21,000 pupils which is broadly in line with proxy estimates of off-rolling.⁴¹

We conducted sensitivity analyses to understand how robust the relationship between multiple suspensions and attainment was to different approaches to our outcome measure. Figure 13 shows that regardless of the definition we used, the overall pattern and trend remains. In other words, pupils with even just one suspension are, on average, not achieving a standard pass, regardless of how we coded missing GCSE data. Across the different approaches, there appears to be a relationship that could be described as ‘exponential decay’ in which attainment decreases rapidly with every increase in the number of suspensions. As before, the 10th suspension seems to be point after which attainment does not decrease as rapidly.

Figure 13: The link between the number of suspensions and GCSE grades depending on missing data treatment



⁴¹ Bradbury, ‘Off-Rolling’; Nye and Thompson, ‘Who’s Left 2018, Part One’.

Analysis plan

We built our models sequentially and added explanatory variables in separate blocks. This enabled us to understand the predictive power of the number of suspensions and how they changed as different sets of factors were accounted for. All models included the school URN as a random intercept effect. As we progressively adjusted our models, we were able to move closer to isolating the effects of multiple suspensions on attainment, over and beyond the effects of a pupil's or school's characteristics. Nonetheless, we cannot rule out the possibility that the identified effects of suspensions are reflections of other unobserved characteristics.

- **Model 1** was an unadjusted model with the number of suspensions as a fixed effect and no covariates. The purpose of this was to establish the baseline effect sizes.
- **Model 2** then adjusts for pupil demographics. Pupil demographics included age (based on birth month and birth year), gender, ethnicity, English as an additional language (EAL) status, Free School Meal (FSM) status, and Income Deprivation Affecting Children Index (IDACI) decile.⁴²
- **Model 3** then adds pupil prior attainment. We measured prior attainment using KS2 scores (English and maths). The variable was entered as a quadratic polynomial to capture the non-linear relationship between KS2 and GCSE attainment.
- **Model 4** then adds school characteristics (including school geography and school type) as fixed effects to isolate the effects of school features.
- **Model 5** then adds being permanently excluded in secondary school. 1.1 per cent of pupils in our cohort were excluded. Whilst the proportion is small, outcomes for permanently excluded pupils are likely to be worse than for suspended pupils. As shown in this report, there was a link between multiple suspensions and the risk of permanent exclusion. Therefore, its inclusion in our statistical model was in case the negative effect of multiple suspensions was being driven by the effects of being permanently excluded.

We did not include SEND as a covariate. Part of the process of managing misbehaviour may include the identification of SEND in itself and/or a suspension. As we explored in Figure 12, not all types of SEND are as strongly related to suspensions, and there may be stronger collinearity between social, emotional, or mental health needs, or SEMH, and suspensions in particular.^{43,44} Indeed, the SEND Code of Practice describes *some* manifestations of SEMH as “[d]isplaying challenging, disruptive or disturbing behaviour”. Therefore, including SEND as a covariate in a statistical model intended to tease out the relationship between suspensions and attainment risks introducing bias that attenuates the true association.

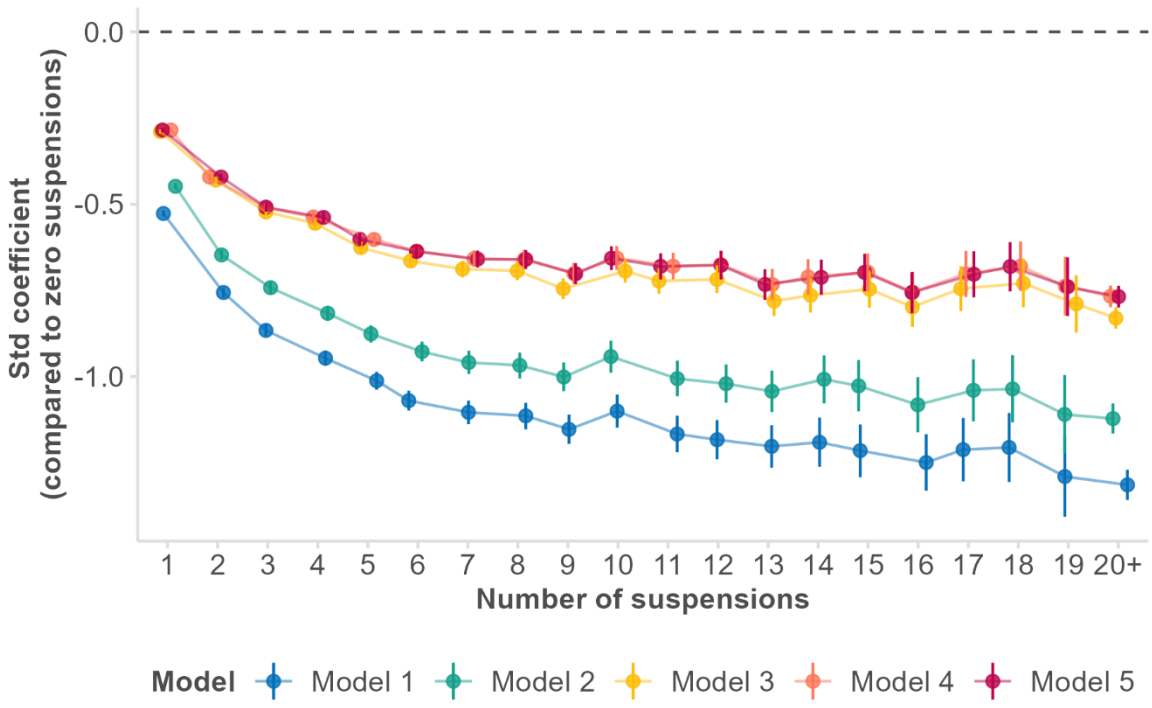
In Figure 14, the sharp reduction in the size of the coefficients in Model 3, where prior attainment was included, highlights that some of the differences can be explained by pre-existing differences in attainment profiles in year 6. Future research should investigate whether the effects of multiple suspensions may at least partly be driven by compositional differences in those suspended once, ten times, and twenty times.

⁴² We used deprivation deciles associated with the postcode of the pupil's home. The lower the IDACI decile, the more disadvantaged the pupil's neighbourhood.

⁴³ Previously the SEMH SEND category was known as 'Behaviour, emotional, and social difficulties'.

⁴⁴ Strand and Fletcher, 'A Quantitative Longitudinal Analysis of Exclusions from English Secondary Schools'.

Figure 14: A coefficient plot showing the relationship between the number of suspensions and GCSE grades for each model



Model 1 = Unadjusted;
 Model 2 = + Demographics;
 Model 3 = + Demographics + Prior attainment;
 Model 4 = + Demographics + Prior attainment + School characteristics;
 Model 5 = + Demographics + Prior attainment + School characteristics + Ever permanently excluded

We also noted that there was little difference between Model 4 and Model 5, in which being excluded was included. This may be because of the low number of 6,161 pupils who were permanently excluded in our sample (and thus lack of strong collinearity with the 88,070 pupils who were suspended). Sensitivity analyses suggested that the coefficients were not overly sensitive to the order in which we added our covariates (e.g. there was an alternative specification in which we added prior attainment to Model 3 and ever permanently excluded to Model 4).

Table 5: Regression table showing model results predicting attainment from multilevel models.

Predictors	Unadjusted model			+ Demographics			+ Prior attainment			+ School characteristics			+ Ever permanently excluded		
	B	SE	p	B	SE	p	B	SE	p	B	SE	p	B	SE	p
(Intercept)	-0.321	0.013	<0.001	-0.33	0.012	<0.001	-0.191	0.008	<0.001	0.071	0.012	<0.001	0.071	0.012	<0.001
0 suspensions*															
1 suspension	-0.527	0.004	<0.001	-0.448	0.004	<0.001	-0.289	0.003	<0.001	-0.285	0.003	<0.001	-0.285	0.003	<0.001
2 suspensions	-0.756	0.007	<0.001	-0.647	0.007	<0.001	-0.43	0.005	<0.001	-0.421	0.005	<0.001	-0.421	0.005	<0.001
3 suspensions	-0.866	0.009	<0.001	-0.742	0.009	<0.001	-0.522	0.007	<0.001	-0.509	0.007	<0.001	-0.509	0.007	<0.001
4 suspensions	-0.947	0.011	<0.001	-0.816	0.011	<0.001	-0.555	0.008	<0.001	-0.537	0.008	<0.001	-0.538	0.008	<0.001
5 suspensions	-1.012	0.013	<0.001	-0.876	0.013	<0.001	-0.626	0.009	<0.001	-0.602	0.009	<0.001	-0.602	0.009	<0.001
6 suspensions	-1.07	0.015	<0.001	-0.928	0.015	<0.001	-0.664	0.011	<0.001	-0.636	0.011	<0.001	-0.637	0.011	<0.001
7 suspensions	-1.104	0.017	<0.001	-0.959	0.017	<0.001	-0.688	0.012	<0.001	-0.658	0.012	<0.001	-0.659	0.012	<0.001
8 suspensions	-1.114	0.02	<0.001	-0.967	0.019	<0.001	-0.693	0.014	<0.001	-0.66	0.014	<0.001	-0.66	0.014	<0.001
9 suspensions	-1.153	0.022	<0.001	-1.001	0.021	<0.001	-0.745	0.015	<0.001	-0.701	0.016	<0.001	-0.702	0.016	<0.001
10 suspensions	-1.1	0.024	<0.001	-0.942	0.024	<0.001	-0.694	0.017	<0.001	-0.656	0.018	<0.001	-0.657	0.018	<0.001
11 suspensions	-1.167	0.027	<0.001	-1.006	0.026	<0.001	-0.723	0.019	<0.001	-0.68	0.019	<0.001	-0.68	0.019	<0.001
12 suspensions	-1.183	0.029	<0.001	-1.021	0.028	<0.001	-0.718	0.021	<0.001	-0.675	0.021	<0.001	-0.677	0.021	<0.001
13 suspensions	-1.202	0.031	<0.001	-1.043	0.03	<0.001	-0.781	0.022	<0.001	-0.733	0.022	<0.001	-0.733	0.023	<0.001
14 suspensions	-1.191	0.036	<0.001	-1.008	0.035	<0.001	-0.764	0.026	<0.001	-0.711	0.026	<0.001	-0.712	0.026	<0.001
15 suspensions	-1.215	0.039	<0.001	-1.027	0.038	<0.001	-0.746	0.028	<0.001	-0.697	0.028	<0.001	-0.698	0.028	<0.001
16 suspensions	-1.249	0.042	<0.001	-1.082	0.041	<0.001	-0.798	0.03	<0.001	-0.755	0.03	<0.001	-0.756	0.03	<0.001
17 suspensions	-1.212	0.047	<0.001	-1.04	0.046	<0.001	-0.745	0.033	<0.001	-0.702	0.034	<0.001	-0.703	0.034	<0.001
18 suspensions	-1.206	0.051	<0.001	-1.036	0.05	<0.001	-0.729	0.036	<0.001	-0.68	0.036	<0.001	-0.681	0.036	<0.001
19 suspensions	-1.29	0.06	<0.001	-1.11	0.058	<0.001	-0.789	0.042	<0.001	-0.738	0.043	<0.001	-0.739	0.043	<0.001
20+ suspensions	-1.314	0.023	<0.001	-1.122	0.022	<0.001	-0.83	0.016	<0.001	-0.767	0.016	<0.001	-0.768	0.016	<0.001
Age (months)				0.038	0.001	<0.001	-0.018	0.001	<0.001	-0.018	0.001	<0.001	-0.018	0.001	<0.001
Girls*															
Boys				-0.124	0.002	<0.001	-0.141	0.002	<0.001	-0.139	0.002	<0.001	-0.139	0.002	<0.001
White British*															
Any other Asian Background				0.289	0.009	<0.001	0.262	0.007	<0.001	0.261	0.006	<0.001	0.261	0.006	<0.001

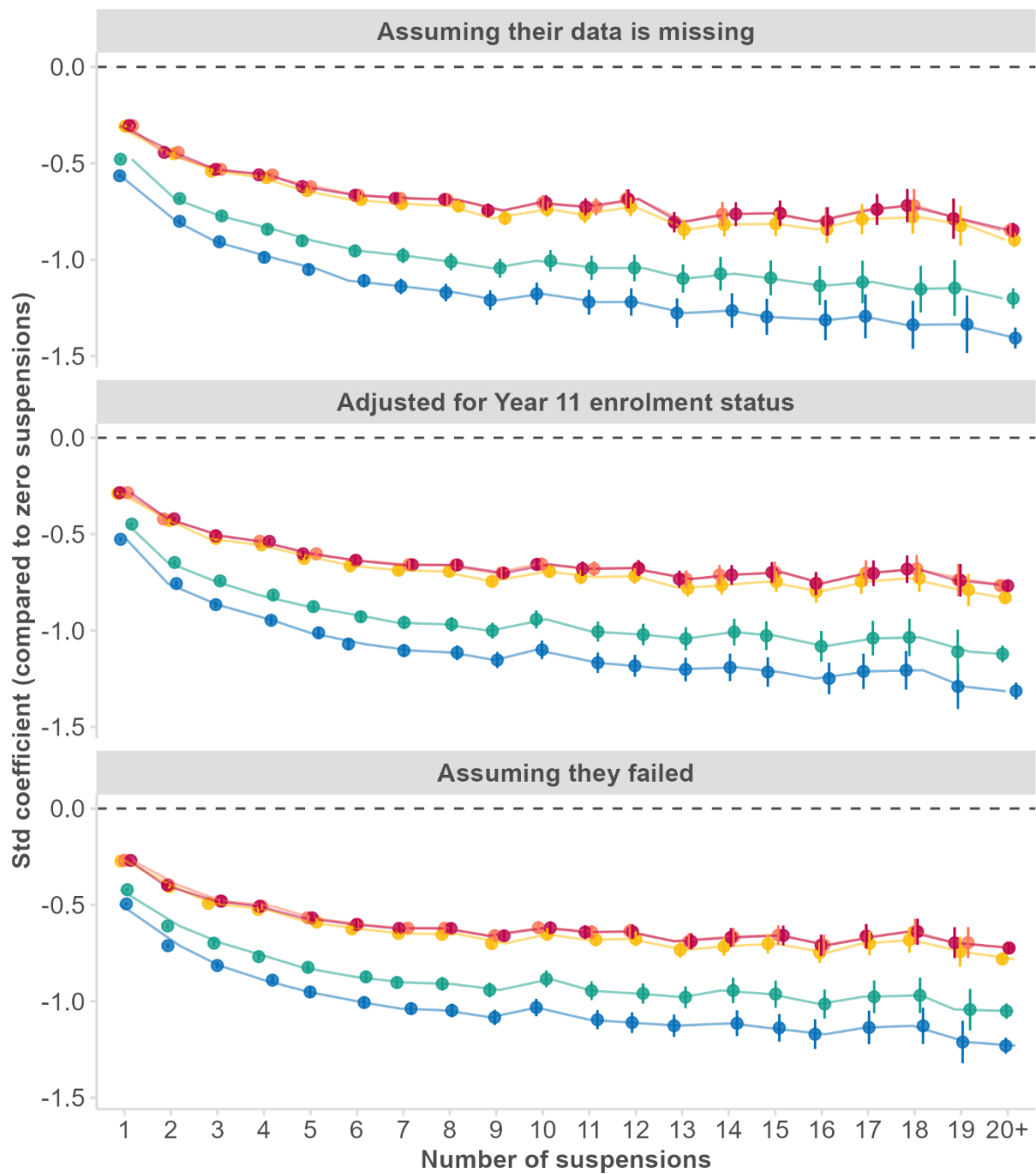
Any other Black Background	0.005	0.013	0.716	0.113	0.009	<0.001	0.112	0.009	<0.001	0.112	0.009	<0.001
Any other Ethnic group	0.077	0.009	<0.001	0.142	0.007	<0.001	0.139	0.007	<0.001	0.139	0.007	<0.001
Any other Mixed Background	0.129	0.008	<0.001	0.126	0.006	<0.001	0.126	0.006	<0.001	0.126	0.006	<0.001
Any other White Background	0.025	0.006	<0.001	0.126	0.004	<0.001	0.122	0.004	<0.001	0.122	0.004	<0.001
Bangladeshi	0.339	0.01	<0.001	0.292	0.007	<0.001	0.291	0.007	<0.001	0.291	0.007	<0.001
Black African	0.157	0.007	<0.001	0.184	0.005	<0.001	0.181	0.005	<0.001	0.181	0.005	<0.001
Black Caribbean	-0.115	0.01	<0.001	0.015	0.007	0.025	0.012	0.007	0.071	0.012	0.007	0.072
Chinese	0.555	0.018	<0.001	0.4	0.013	<0.001	0.402	0.013	<0.001	0.402	0.013	<0.001
Gypsy/Roma	-0.663	0.021	<0.001	-0.297	0.016	<0.001	-0.301	0.016	<0.001	-0.301	0.016	<0.001
Indian	0.319	0.008	<0.001	0.28	0.006	<0.001	0.28	0.006	<0.001	0.28	0.006	<0.001
NA	-0.124	0.012	<0.001	0.009	0.009	0.29	0.005	0.008	0.564	0.005	0.008	0.56
Pakistani	0.143	0.007	<0.001	0.177	0.005	<0.001	0.176	0.005	<0.001	0.176	0.005	<0.001
Traveller of Irish Heritage	-0.26	0.059	<0.001	-0.114	0.043	0.008	-0.099	0.043	0.022	-0.099	0.043	0.022
White and Asian	0.201	0.01	<0.001	0.148	0.007	<0.001	0.147	0.007	<0.001	0.147	0.007	<0.001
White and Black African	0.12	0.014	<0.001	0.098	0.01	<0.001	0.096	0.01	<0.001	0.096	0.01	<0.001
White and Black Caribbean	-0.048	0.009	<0.001	-0.022	0.006	0.001	-0.02	0.006	0.002	-0.02	0.006	0.002
White Irish	0.066	0.019	0.001	0.054	0.014	<0.001	0.053	0.014	<0.001	0.053	0.014	<0.001
Not EAL*												
EAL	-0.105	0.005	<0.001	0.013	0.003	<0.001	0.008	0.003	0.016	0.008	0.003	0.016
Not FSM *												
FSM	-0.304	0.003	<0.001	-0.137	0.002	<0.001	-0.133	0.002	<0.001	-0.133	0.002	<0.001
IDACI Decile 1*												
IDACI Decile 2	0.02	0.004	<0.001	0.016	0.003	<0.001	0.016	0.003	<0.001	0.016	0.003	<0.001
IDACI Decile 3	0.05	0.005	<0.001	0.039	0.003	<0.001	0.038	0.003	<0.001	0.038	0.003	<0.001
IDACI Decile 4	0.084	0.005	<0.001	0.06	0.003	<0.001	0.061	0.003	<0.001	0.061	0.003	<0.001
IDACI Decile 5	0.136	0.005	<0.001	0.089	0.004	<0.001	0.089	0.004	<0.001	0.089	0.004	<0.001
IDACI Decile 6	0.179	0.005	<0.001	0.118	0.004	<0.001	0.118	0.004	<0.001	0.118	0.004	<0.001
IDACI Decile 7	0.221	0.005	<0.001	0.138	0.004	<0.001	0.138	0.004	<0.001	0.138	0.004	<0.001
IDACI Decile 8	0.254	0.005	<0.001	0.157	0.004	<0.001	0.158	0.004	<0.001	0.158	0.004	<0.001
IDACI Decile 9	0.296	0.005	<0.001	0.181	0.004	<0.001	0.182	0.004	<0.001	0.182	0.004	<0.001

IDACI Decile 10	0.36	0.006	<0.001	0.218	0.004	<0.001	0.22	0.004	<0.001	0.22	0.004	<0.001
IDACI Decile NA	0.097	0.044	0.029	0.245	0.032	<0.001	0.238	0.032	<0.001	0.238	0.032	<0.001
Prior attainment				-1.291	0.003	<0.001	-1.304	0.003	<0.001	-1.304	0.003	<0.001
Prior attainment (squared)				1.72	0.003	<0.001	1.727	0.003	<0.001	1.727	0.003	<0.001
London*												
East Midlands							-0.063	0.016	<0.001	-0.063	0.016	<0.001
East of England							-0.049	0.015	0.001	-0.049	0.015	0.001
North East							-0.051	0.019	0.008	-0.051	0.019	0.008
North West							-0.06	0.014	<0.001	-0.06	0.014	<0.001
South East							-0.025	0.014	0.061	-0.025	0.014	0.061
South West							-0.024	0.015	0.114	-0.024	0.015	0.112
West Midlands							-0.042	0.014	0.004	-0.042	0.014	0.003
Yorkshire and The Humber							-0.018	0.015	0.252	-0.018	0.015	0.252
Local authority maintained school*												
Academy							0.057	0.008	<0.001	0.057	0.008	<0.001
Free school							0.073	0.022	0.001	0.073	0.022	0.001
Other type of school							-0.582	0.016	<0.001	-0.583	0.016	<0.001
PRU/AP							-0.628	0.014	<0.001	-0.63	0.014	<0.001
Special school							-0.933	0.012	<0.001	-0.933	0.012	<0.001
Not excluded*												
Excluded										0.011	0.011	0.319
Random Effects												
σ^2	0.651		0.613			0.311			0.309			0.309
τ_{00}	0.695 _{School}		0.593 _{School}			0.219 _{School}			0.050 _{School}			0.050 _{School}
ICC	0.517		0.492			0.414			0.139			0.139
Number of schools	4709		4706			4685			4199			4199
Number of pupils	559243		557985			553219			551145			551145
Marginal R ² / Conditional R ²	0.058 / 0.544		0.105 / 0.545			0.480 / 0.695			0.615 / 0.669			0.615 / 0.668

Notes: * = Reference category, FSM = Free School Meals, EAL = English as an Additional Language, IDACI = Income Deprivation Affecting Children Index.

As before, we conducted sensitivity analyses to understand how the measure of GCSE grades affected our results. Figure 15 shows that regardless of the approach used, the overall pattern and trend remains. Ultimately, suspensions are negatively associated with attainment, even after controlling for a rich array of observed pupil and school characteristics.

Figure 15: A coefficient plot that shows the relationship between the number of suspensions and GCSE grades for each model and each measure of attainment



Model 1 Model 2 Model 3 Model 4 Model 5

Model 1 = Unadjusted;
 Model 2 = + Demographics;
 Model 3 = + Demographics + Prior attainment;
 Model 4 = + Demographics + Prior attainment + School characteristics;
 Model 5 = + Demographics + Prior attainment + School characteristics + Ever permanently excluded