Evaluation of the Together an Active Future programme using population level data April 2018 – August 2022

Key findings

- Since the start of the project the TaAF intervention areas have done better in their levels of physical inactivity compared with local authorities with similar characteristics.
- This suggests the TaAF programme may be having a positive effect, however uncertainty around this is large.
- This analysis should be repeated over the next 5 years as more data is collected.
- Absolute levels of physical inactivity have increased in the Together an Active Future intervention areas (TaAF) since 2020, due to the Covid-19 pandemic and associated restrictions on physical activity.
- Rates of physical activity are still higher than average and large inequalities remain.

Introduction

This is an evaluation of the Together an Active Future programme, one of Sport England's 12 delivery pilots taking place in the local authorities of Blackburn with Darwen, Burnley, Hyndburn, Pendle, Rossendale and Ribble Valley. The goal of the programme has been to increase levels of physical activity across these areas of Pennine Lancashire. While there has been extensive qualitative evaluation of the approaches being used in the TaAF programme, there has not been an investigation of whether the pilot has impacted physical inactivity levels at the population level. If the TaAF Program has been successful we would expect to see the TaAF local authorities do better in the rates of physical inactivity than other areas with similar characteristics which were not part of a local delivery pilot. It is important to remember that most of the intervention has taken place in the context of the pandemic where levels of physical inactivity have risen across the country. In this report we first descriptively compare the Together an Active Future local authorities to the rest of the country before using difference and difference and synthetic control methods to compare the TaAF areas with control groups, which haven't received any intervention.

Data

To carry out the evaluation, we use data from the Active Lives Survey and the Active Lives Children survey. These are nationally representative yearly surveys run by Sport England with the goal of monitoring physical activity levels in England. The fieldwork for the survey is spread throughout the year with an annual sample size of close to 200,000 for the adult survey and around 100,000 for the children survey, giving repeated cross sections of the English population. The survey year lasts from November to November.

In the adult survey the sampling was designed to achieve a target of 500 respondents for the majority of local authorities, to allow assessment of local level authority level trends. Despite this reasonable sample size, the margin of error can still be quite large particularly when there

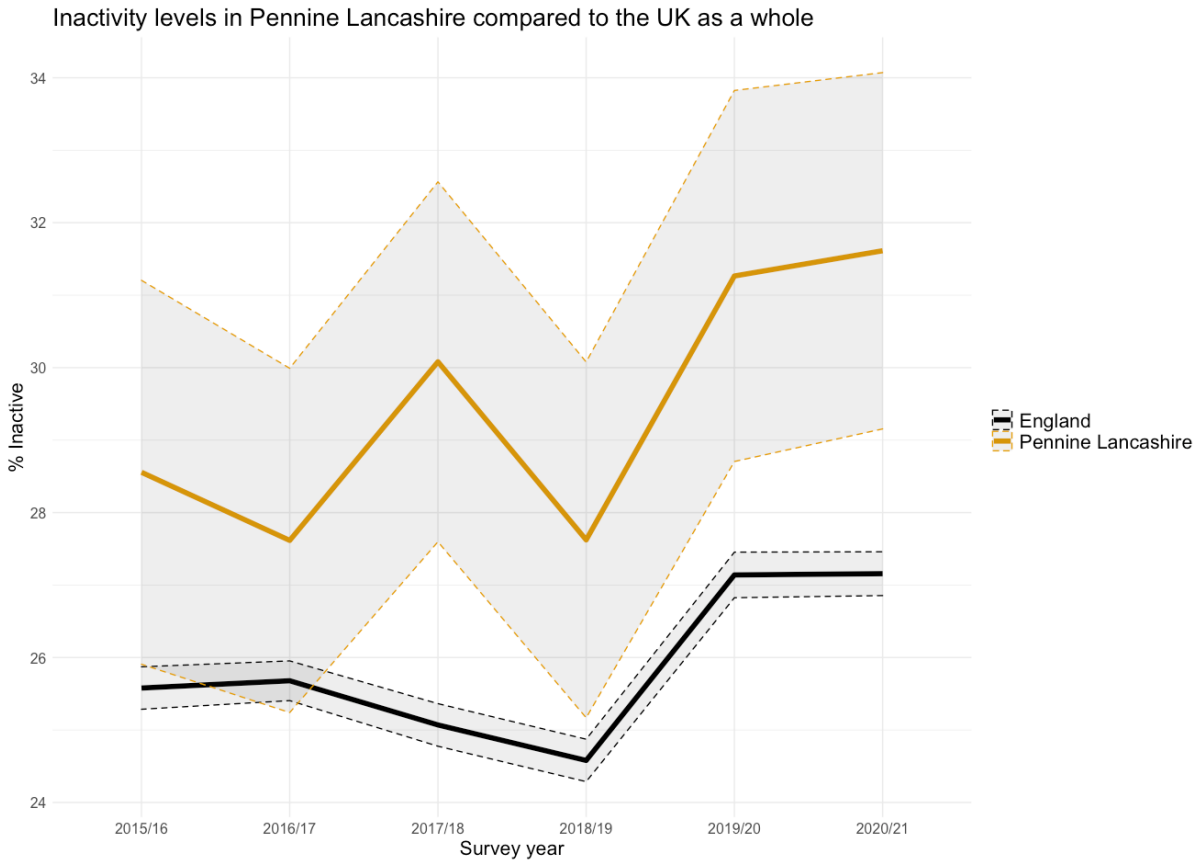
is a desire to look at different demographic groups within local authorities. The children's survey has even greater uncertainties.

As our headline measure for this report we use the percentage of the population who are inactive. This is defined as less than 30 minutes physical activity of at least moderate intensity per week. For the children survey we use percentage of the population who are `less active` which is defined as less than 30 minutes of physical activity of at least moderate intensity per day.

Trends in Physical Activity over time

The simplest thing we can do is look at the trends in physical inactivity of time. Figure 1 shows these, making it immediately obvious that physical inactivity is substantially higher in the TaAF areas compared to the rest of the country.

At the beginning of the TaAF programme in 2018/19 there was a reduction in physical activity in Pennine Lancashire, however there was a large increase in 2019/20 and levels stayed high in 2020/21. This increase is observed across the country and can be attributable to the impact of the Covid-19 pandemic and associated restrictions. It is also clear, however, from this graph that inactivity levels increased more in Pennine Lancashire in the years of the pandemic compared to the national average both relatively and absolutely. In fact, if we take just the months since the start of the pandemic we see an increase in physical inactivity of percentage points 4 for Pennine Lancashire compared with just 2 percentage points in in England on average.

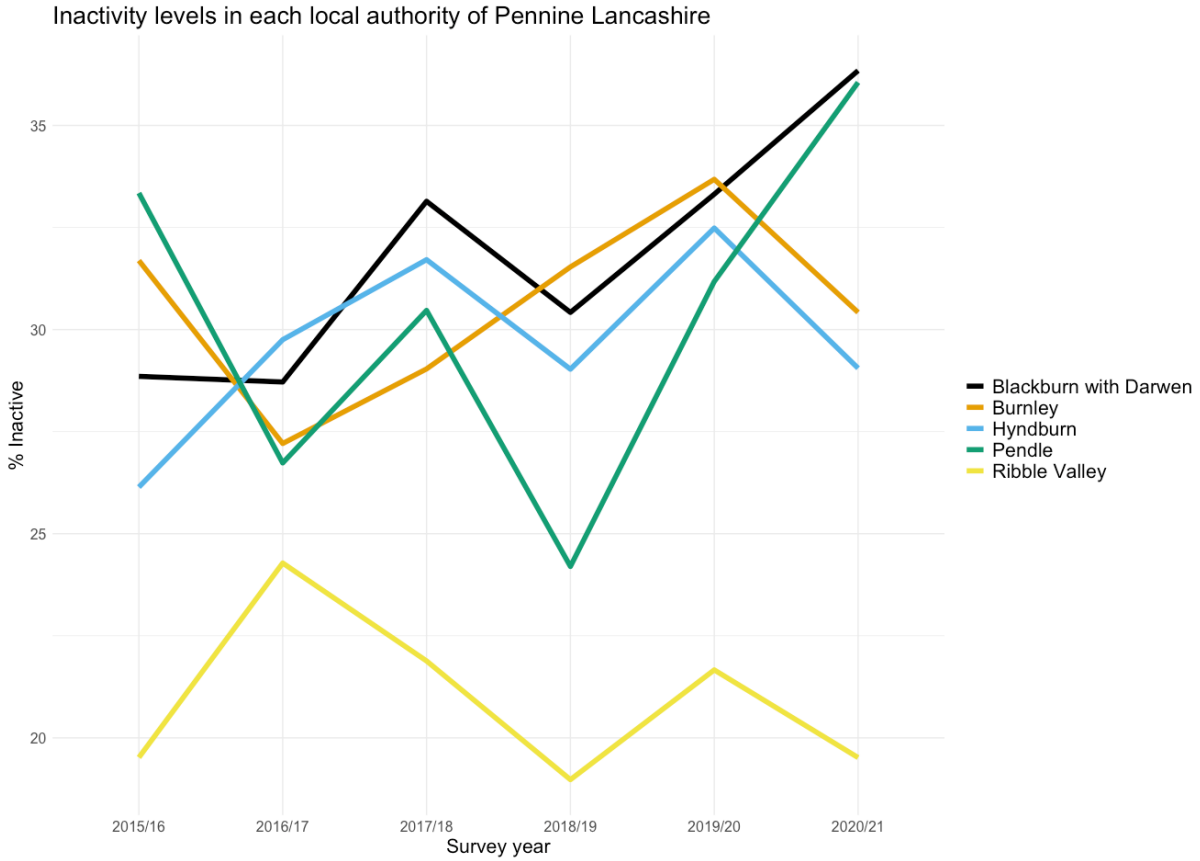


We also know, however, that the TaAF local authorities have specific characteristics. In particular, as Table 1 shows, they are more deprived, urban and have a much higher south Asian population than average. Our research on physical inactivity trends during the pandemic has shown that physical inactivity has increased in more deprived and urban areas compared with more affluent and rural ones. This greater increase in physical inactivity that we observe in the TaAF areas is, therefore, to be expected. This highlights the importance of taking an approach that compares the TaAF local authorities to others which are as similar as possible in order to assess the effectiveness of the TaAF programme. A smaller decrease, for example, than in equivalent areas during the pandemic would evidence for the TaAF programme having an impact.

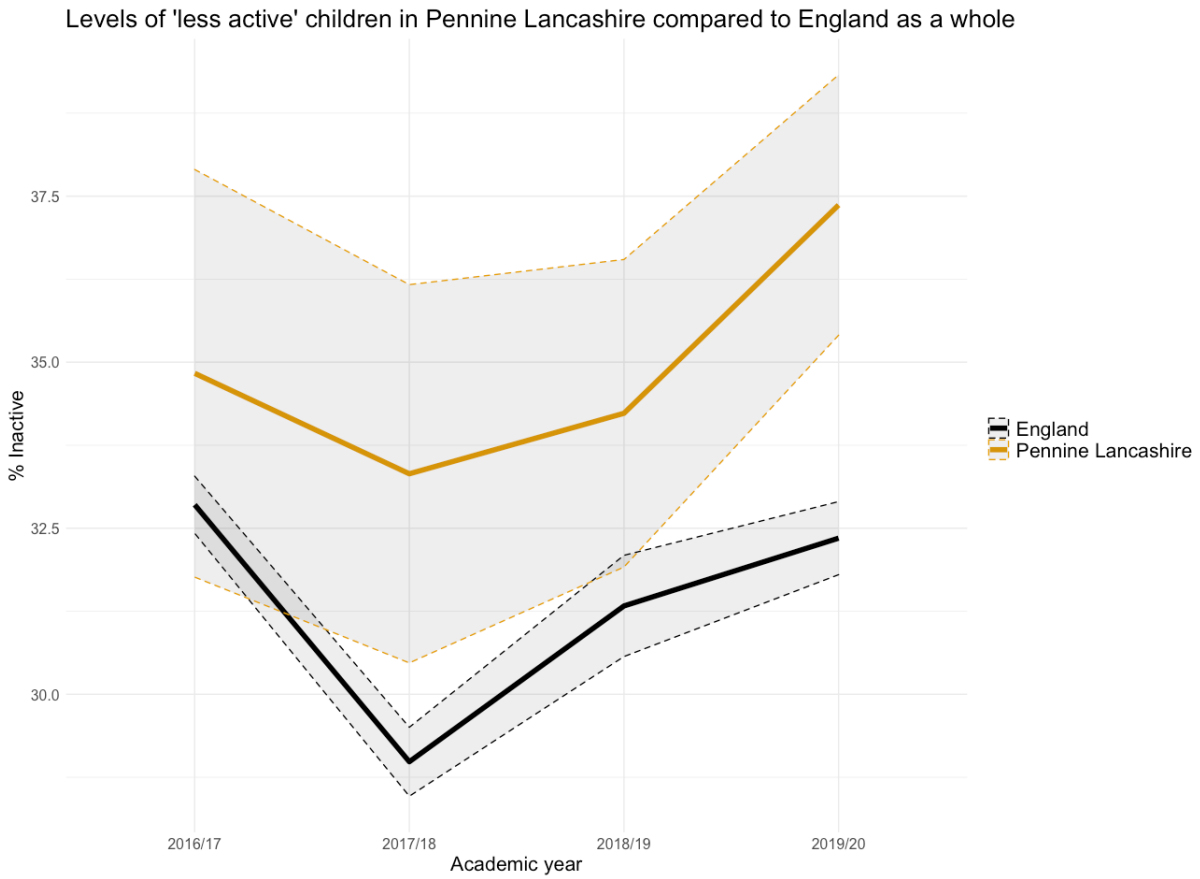
Table 1 Comparison of TaAF and non local delivery pilot local authorities

	Non LDP Local authorities	TaAF
% Under 16	18.7	20.4
% 16 to 29	16.2	15.8
% 60 to 74	16.5	16.5
% 75+	9.2	8.2
Average IMD	18.9	28.9
% Asian	5.6	12.6
% White	89.3	86
% Black	2.4	0.2
% Urban	75.8	82.4

We can also break down trends into the six Pennine Lancashire local authorities as shown in Figure 2, however here the uncertainty is much greater than when we included them altogether. Despite this we can be confident that there are lower levels of inactivity in RIbble Valley, the most affluent area, compared with the other local authorities. There is also some evidence to suggest that Blackburn with Darwen and Pendle have fared worse during the pandemic, however there is a large amount of uncertainty due to the small sample size in each local authority in each year so we can't be very confident that this is really the case.



Looking at the Children's survey (Figure 3) we can again see that the TaAF intervention areas have higher percentages of 'less active' children than average. The increase in physical inactivity in England as a whole following the pandemic is less prominent than with adults, however, this is still very noticeable in Pennine Lancashire, which is perhaps a cause for concern.



Difference in Differences and Synthetic Control

Difference in difference methods are a quasi-experimental approach that compare the average change in an outcome over time in an intervention group to the average change over time for a control group. Assuming that the trends in the intervention and the control group are parallel then any difference can be attributable to the effect of the intervention.

As we have seen already it is unlikely that the trends in Pennine Lancashire are parallel to the trends in the rest of the country. For this reason, it is necessary to create a control group where this is a reasonable assumption, or in other words a group of local authorities which is similar as possible to the local authorities of Pennine Lacnashire.

We used two separate methods to do his in slightly different ways. Firstly we use a doubly robust difference in difference estimation procedure[1,2]. This involves propensity score matching to match the TaAF local authorities to a control group with similar distributions on key characteristics. We match at the local authority level using the average deprivation, the percentage of the local authority that is urban and the percentage of people living in the local authority who are South Asia. It also controls for these characteristics a second time in a regression model, which makes the model doubly robust to misspecification. The second

method is synthetic control, which creates a weighted average of all of the local authorities in the UK as a control group. The synthetic control additionally matches on past trends.

Both methods suggest a small reduction in physical activity in the TaAF areas compared with the respective control groups. For the doubly robust method it is on average about 2 percentage points and for the synthetic control method it is 1.3 percentage points. The uncertainty is large and the 95% confidence intervals for both estimates (just) overlap zero so we do not have strong evidence that TaAF is having a positive effect. Nevertheless, these type of differences would be meaningful; each percentage point is equivalent to roughly 12,000 extra people physical activity across Pennine Lancashire.

Figures 3 and 4 show these results graphically. Figure 3 shows the average treatment effect of the treated from the difference in difference approach or in other words the effect of the TaAF program on rates of physical inactivity in percentage point terms. We can see that in each of the three years since the start of the intervention that the TaAF program has outperformed the control group, however in all three years the confidence intervals include zero.

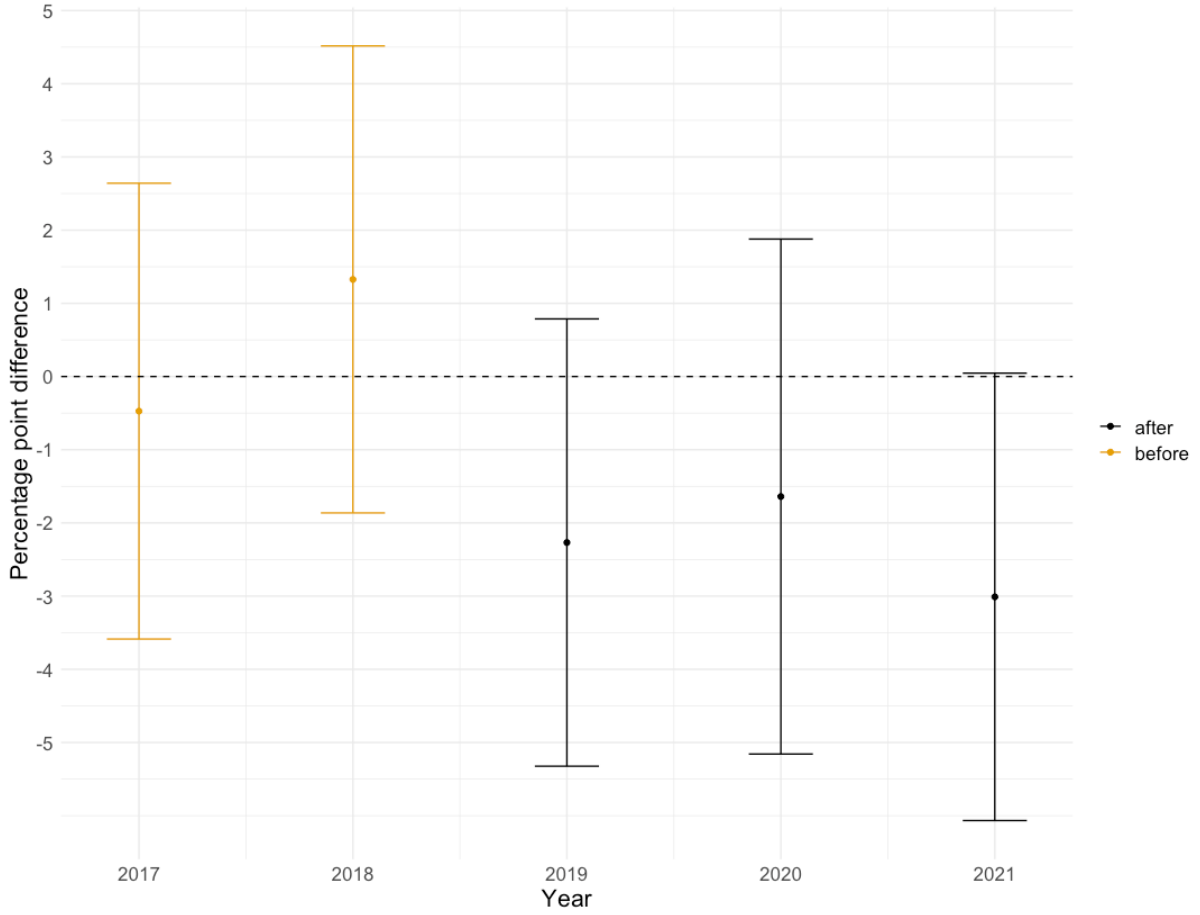
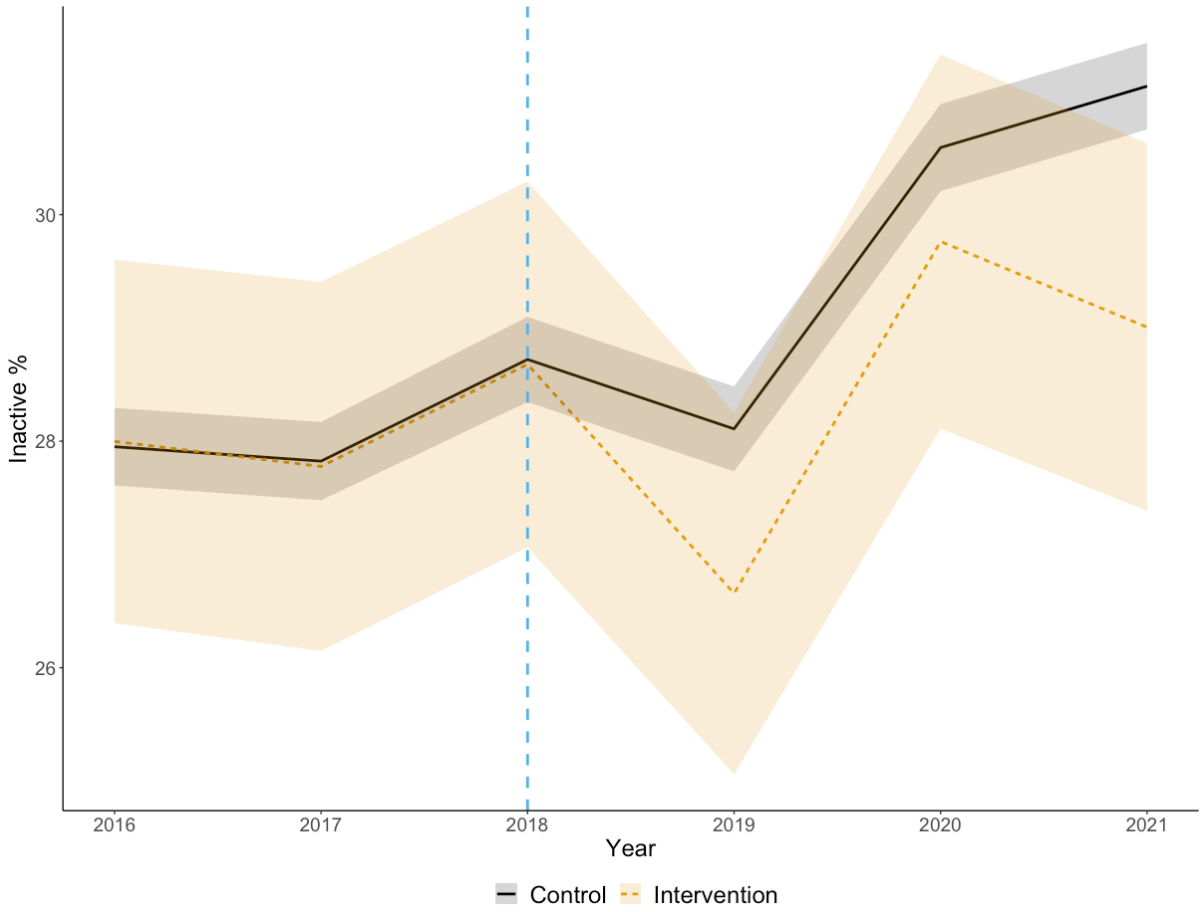


Figure 4 shows the results of the synthetic control study displaying percentage of people who are inactive in the TaAF local authorities and in the synthetic control over time. This method shows similar results to the above, in that we can see that The TaAF local authorities did better in all three years post intervention than the control local authorities but particularly in 2021.



Conclusion

In this report we have shown that there is there is some evidence to suggest that the TaAF programme is having a positive effect on physical activity levels, however much uncertainty still remains. It is important to monitor this situation further, as with extra data it will possible to be more confident about whether TaAF is (or is not) having an effect. Furthermore, it might be expected that the TaAF intervention would take time to manifest itself. Despite this levels of physical activity remain higher than average and with the challenge of the pandemic which has increased inequalities there remain big challenges for the TaAF programme to overcome in order to reach it's aims.

References

1. Callaway, B. & Sant'Anna, P. H. C. Difference-in-Differences with multiple time periods. *Journal of Econometrics* **225**, 200–230 (2021).

2. Sant'Anna, P. H. C. & Zhao, J. Doubly robust difference-in-differences estimators. *Journal of Econometrics* **219**, 101–122 (2020).