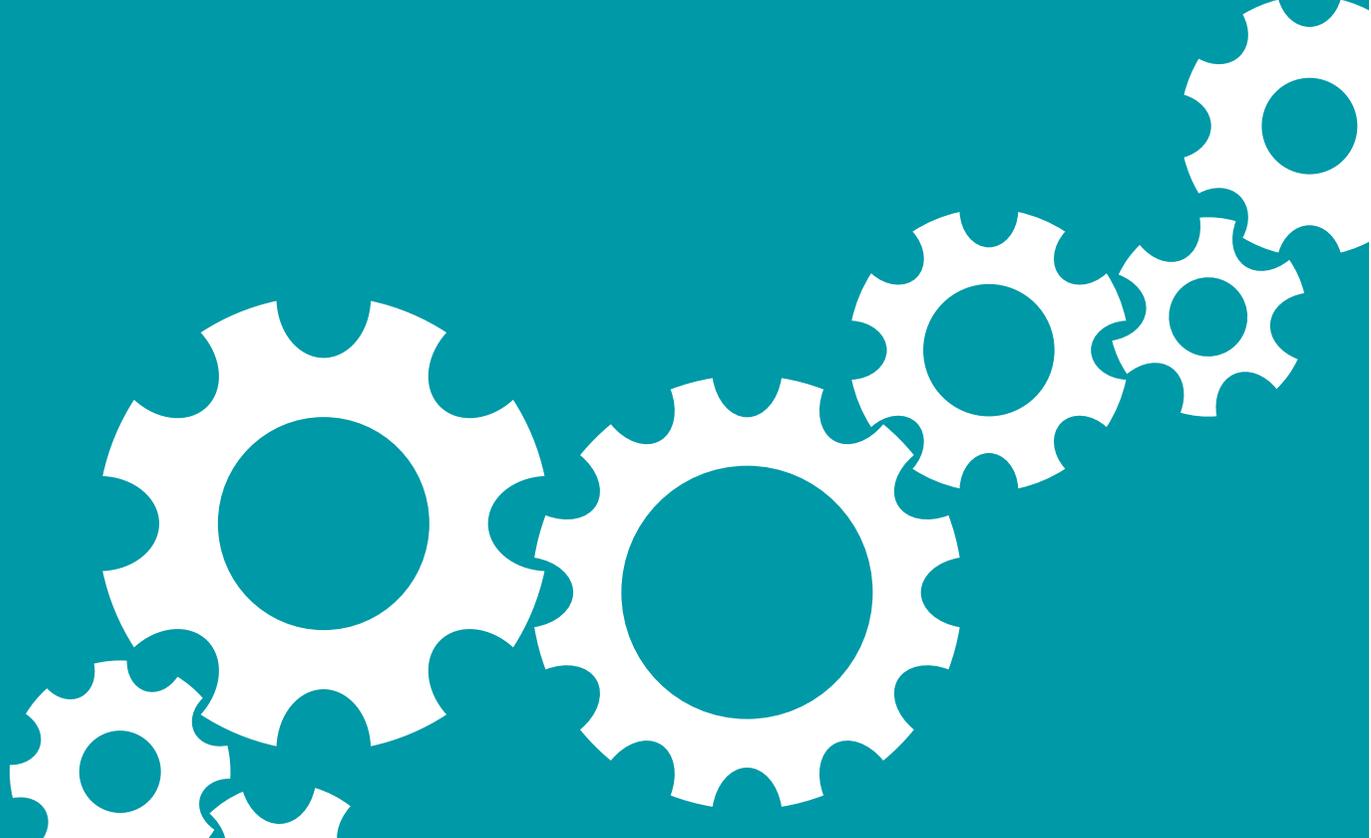


The Rise of Experimental Government: Cross-Government Trial Advice Panel Update Report

November 2018



About this report

In 2015 the Cabinet Office and the Economic and Social Research Council set up the Cross-Government Trial Advice Panel. Its launch marked the first time that the UK Government had brought together a team of experts – from academia and the civil service – to support the increased use of controlled experiments in public policy. The aim was an ambitious one: to embed a culture of experimentation in government by making it easier for civil servants to test new ways of improving public services. This report looks at the impact of this initiative.

Foreword by ESRC

Policymakers face difficult decisions every day. Social science can help inform these decisions, improving outcomes for individuals, institutions, and communities. The Economic and Social Research Council (ESRC) has a crucial role in mobilising research to support policymaking.

Social science can have an impact across a range of public policy outcomes. Social scientists can test the effectiveness of policies, which can then help inform future iterations of policy. For example, finding that teaching quality drives educational outcomes more than class size can inform decisions about where to invest limited resources. Or finding that maternal depression affects children's educational attainment can help inform policy about psychological support.

The ESRC supports and directly funds a number of initiatives that bring research findings together to inform policy and

practice. We are a major funder of the What Works Network – a group of research centres that harness available evidence to help inform policy across a broad range of issues, including social care and policing. We helped to create the Alliance for Useful Evidence, which champions the smarter use of evidence in social policy and practice. The ESRC's network of Impact Acceleration Accounts helps social scientists collaborate locally, nationally, and internationally to maximise the impact of research findings. We directly support the Parliamentary Office of Science and Technology, giving parliamentarians access to interdisciplinary analysis and skills.

The UK has an international reputation for excellence in generating, collecting, and archiving social data. This can help us understand attitudes and behaviours across individuals and groups over time, and in

different contexts. We champion innovation in data, supporting the studies and facilities that form the backbone of the UK's social science infrastructure. We also have a long history of building capability in empirical and experimental methods. For example, we support Q-STEP, an innovative programme training undergraduates in quantitative methods, as well as Centres for Doctoral Training in new forms of data and in biosocial methods, and a National Centre for Research Methods.

The ESRC is proud to have supported the Trial Advice Panel since the beginning. This report is a timely reflection on the achievements and the future potential for cutting-edge social science research and methods to maximise the impact of policy.

Professor Jennifer Rubin
Executive Chair, ESRC

Foreword by the What Works National Adviser

Experiments in government are not new, but in recent years we have seen a dramatic increase in their use. We should strongly welcome and celebrate this.

In everyday speech, people often talk about ‘doing an experiment’. They normally mean ‘trying out something new or different’,¹ though sometimes they do mean it in the deeper sense of ‘a test done in order to learn something new or discover if something works or is true.’² Too often in government and elsewhere, the idea of experimentation is used in the former rather than the latter sense. We want public services and governments sometimes to try something new. But if and when they do, we want to know if it worked! And why stop there: don’t we want to know whether what we are already doing works, or whether there is a better alternative?

In May 1753, James Lind, a surgeon in the British Navy, published his experiment trying out six different treatments on pairs of sailors

suffering from the dreaded scurvy. Generally regarded as the first published randomised controlled trial, he reported the now famous result:

*the most sudden and visible good effects were perceived from the use of oranges and lemons; one of those who had taken them being at the end of six days fit for duty ... the other was the best recovered of any in his condition.*³

In contrast, those given the widely used Naval treatment of elixir of vitriol (sulphuric acid and herbs) received ‘no good effects from its internal use’. Yet it was still nearly 50 years before the British navy issued lemon rations to all its sailors.

A question we should all ask ourselves is whether we are, albeit with good intent, doing the equivalent of issuing sulphuric acid for scurvy – either because we haven’t ever really tested it or because we’ve failed to notice the result of someone who has.

Fortunately, through the work of the Trial Advice Panel (TAP) and the What Works movement, there is a rising generation of civil and public servants who are latter-day James Linds. I want to thank and encourage these public servants, TAP members, and the TAP Steering Group, chaired by my longstanding colleague Stephen Aldridge.

In the end, experimentation is not about complicated methods or maths (indeed the RCT in particular has a beautiful simplicity to it). Rather, it’s fundamentally about humility. The world, and causation, is complicated. It is easy, and convenient, to tell ourselves that what we are doing will help the student, patient, or citizen. But generally the bolder, and more accurate truth is that we are not sure. Maybe it doesn’t work. Maybe there’s a better way. We should ask these questions – and experimentation can help us answer them.

Dr David Halpern

What Works National Adviser, Cabinet Office

¹ Definition of “experiment” from the Collins English Dictionary, HarperCollins Publishers, www.collinsdictionary.com/dictionary/english/experiment

² Definition of “experiment” from the Cambridge Advanced Learner’s Dictionary & Thesaurus, Cambridge University Press, dictionary.cambridge.org/dictionary/english/experiment

³ Lind, J. (1753) *A Treatise of the Scurvy*

Executive Summary

It is more important than ever to ensure that public money is used to maximum effect. To do this we need to test whether policies are working and whether adaptations to programmes could deliver improvements.

Recent years have seen government departments make use of experimental methods in a growing range of policy areas, including energy, the environment, housing, and social care. One of the key innovations supporting this trend is the Cross-Government Trial Advice Panel, which was set up in 2015 to help civil servants design and implement effective trials. It is a free-to-use advisory service made up of experts from government and academia.

Since its launch, the panel has assisted 52 projects across 18 departments and public bodies. This includes supporting trials and evaluations that:

- Helped electricity and gas customers find cheaper deals. Ofgem's first large-scale randomised controlled trial (RCT) showed that switching rates tripled when customers were sent letters from their own energy supplier with information about the cheaper tariffs offered by other providers.

- Enhanced community cohesion through English language provision. The Ministry of Housing, Communities and Local Government's first ever RCT found that offering language support to women with low levels of English language proficiency significantly increased their interaction with local amenities and friendships formed with people from different backgrounds.
- Reduced fraud and environmental harm by tackling the illegal disposal, misclassification, and export of waste. The Environment Agency's impact evaluation showed that enforcement activity has a net positive effect on the environment, legitimate businesses, and tax revenues.

Looking across the Trial Advice Panel's activities, a number of important contributions stand out:

1. Helping embed a culture of experimentation in government: The panel has helped get experimental trials off the ground in departments with little experience of conducting them. Many of the teams involved have gone on to develop further trials that test new ways of improving public services.

2. Tackling complex policy issues: It is no coincidence that we have seen many more trials in areas such as tax and employment support where existing administrative data allows key outcomes to be measured more easily. But panel advisers have supported important trials in more complex policy areas such as end-of-life care, family services, and community integration.
3. Ensuring evaluation budgets are used to maximum effect: The panel has been on hand to advise teams on the sort of trial or test that would generate the most useful results. That might be an RCT or another type of robust method. Equally, the panel has played an important role in advising teams when a trial is not feasible.
4. Raising awareness of robust trial methods: Panel members have helped stimulate interest in high quality trial methods by delivering training sessions and coaching civil servants.
5. Making academic research more policy-relevant: Participating in the panel has helped academic experts understand the needs of decision makers and design research trials that answer important policy questions.

Introduction

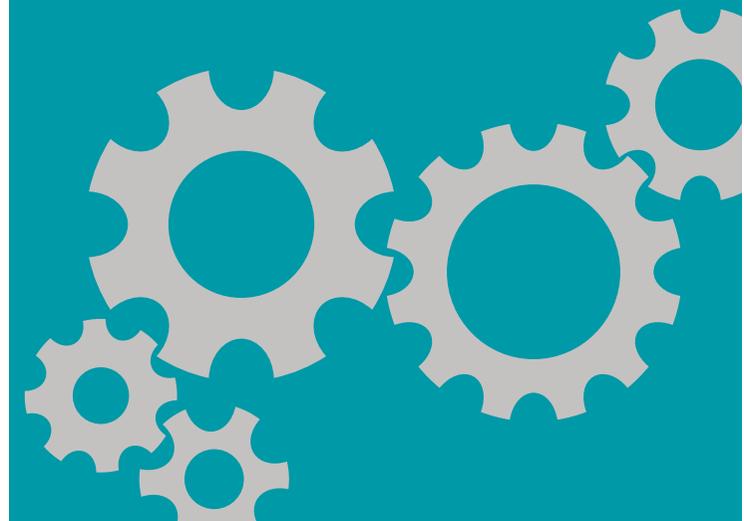
Randomised controlled trials (RCTs) and other forms of controlled experiments have long been used in medicine, business, and some parts of government to test and improve services and products. So when your doctor prescribes a medicine, you have good grounds to trust that the drug has been tested for safety and effectiveness. Equally, visit any webpage of a major retailer and you will likely be viewing one of a number of variants as they continually test ‘what works’ best.

In recent years we have seen government departments make use of experimental methods in a growing range of policy areas including energy, community integration, family services, and adult social care. One of the key innovations supporting this trend is the Cross-Government Trial Advice Panel.

Set up by the Cabinet Office and the Economic and Social Research Council (ESRC) in 2015, the panel is a free-to-use service to help civil servants design and implement effective trials. It is made up of 46 experts from across government and academia that have first-hand experience of running high-quality controlled evaluations.

This report brings together, for the first time:

- A summary of recent trends in the use of experimental methods in government
- Details of the panel’s activities and impact to date
- The results of some of the trials supported by the panel



Part 1: Trends in Experimental Government

Experimentation is not new to government. The Ministry of Agriculture and Fisheries (1919-1955), for example, was a major sponsor of experimental methods in farming research, much of it conducted at Rothamsted Experimental Station in Hertfordshire. Departments such as Work & Pensions and HM Revenue & Customs have for many years run controlled trials to discover what works.

But in recent years we have witnessed a significant rise in the use of experimental methods in new areas of public policy and the wider public sector. Some of the factors influencing this trend are listed below and are responsible for driving demand for the Trial Advice Panel.

1. Growing policy interest in behavioural insights

The creation of the Behavioural Insights Team (BIT) in 10 Downing Street in 2010 spearheaded the use of randomised controlled trials in parts of Whitehall that had previously had little exposure to experimental methods. Now operating as a social purpose company, BIT has initiated over 700 trials that use insights from the behavioural sciences to

test ways of improving the effectiveness of public services.

The last few years have seen a gradual shift towards BIT helping tackle more complex policy challenges such as social mobility, economic growth, and ‘hidden crimes’ such as domestic abuse.⁴

Most major government departments have now established their own behavioural insights functions to develop trials in their areas of work. The Trial Advice Panel has supported some of these trials, with examples such as Ofgem’s Cheaper Market Offers Letter Trial featured in this report.

2. New digital technologies

Advances in digital technologies mean that opportunities for experimentation are greater than ever, while the associated costs are lower. Online retailers quickly learn what works best by constantly testing variants of webpages with different customers – so-called A/B testing. Online government services are able to do the same and the Government Digital Service has expanded its use of A/B testing in the last couple of years.⁵

Many of the projects supported by the Trial Advice Panel have tested how digital services can be adapted to achieve greater social impact (see, for example, the Department for Transport’s driver safety trial in this report).

3. The launch of the What Works Network

The What Works Network – launched by the Cabinet Office and HM Treasury in 2013 – is also responsible for a sharp rise in the number of controlled experiments taking place across some public services, such as education and policing. The initiative brings together a network of research centres, largely funded by government and the ESRC, that are tasked with improving the supply of high quality evidence available to decision makers.

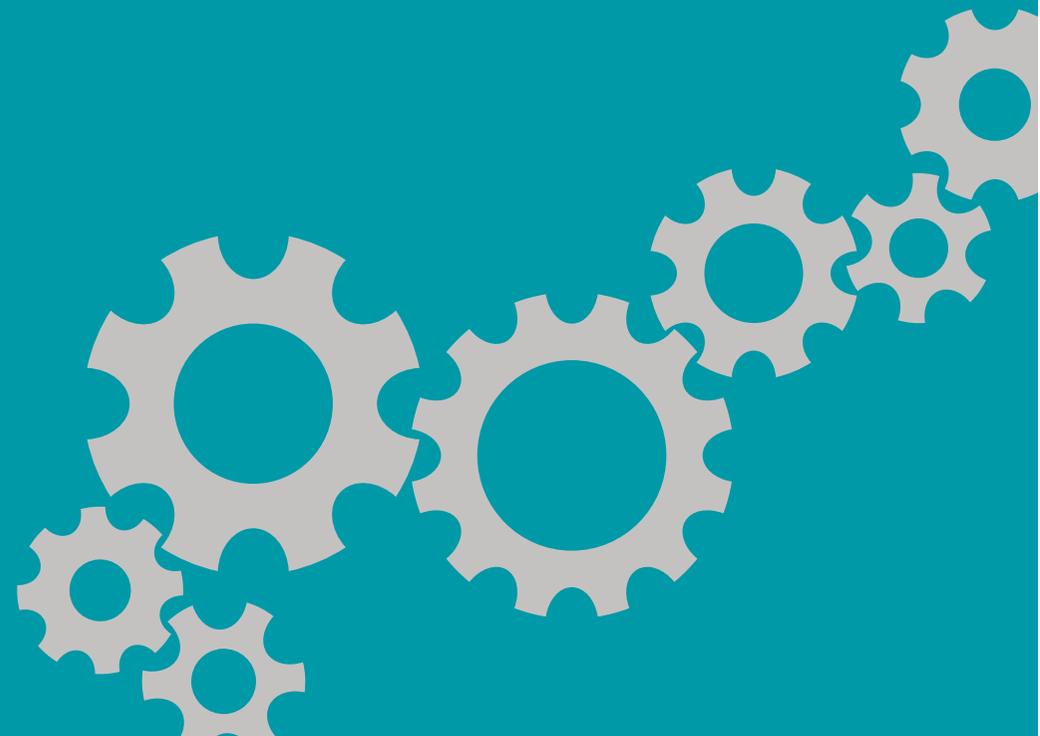
As well as assessing existing research findings in specific policy areas, many centres also fill gaps in the evidence base by commissioning or supporting trials. The Education Endowment Foundation (EEF), for example, has more than doubled the amount of evidence available from education trials in this country. Dispelling early concerns that schools would be reluctant to participate,

⁴ See Behavioural Insights Team Update Report 2016-17, <https://www.behaviouralinsights.co.uk/publications/the-behavioural-insights-team-update-report-2016-17/>

⁵ See, for example, Mcleod, M. (2017) ‘Using A/B testing to measurably improve common user journeys’, <https://insidgovuk.blog.gov.uk/2017/11/14/using-ab-testing-to-measurably-improve-common-user-journeys/>

the EEF has now funded over 160 trials involving over a third of English schools and more than one million children. This work has transformed our understanding of how to improve student attainment (as well as the practices that add little value or may be harmful).

At the heart of the What Works Network sits the What Works Team – a small unit in the Cabinet Office set up to coordinate the network of centres and champion the better use and generation of evidence in government. The Trial Advice Panel has supported the team's efforts to train civil servants in the design and delivery of experimental trials. This activity has translated into multiple requests for Trial Advice Panel support.



Part 2: The Trial Advice Panel: Supporting experimental government

Why was the Trial Advice Panel set up?

The Trial Advice Panel is the product of growing calls for the more widespread use of experimental methods in the development of policy and services (see Figure 1). While parts of the Civil Service have a strong track record of testing and evaluation, there are still many areas of public policy where there is little understanding of whether programmes are delivering their intended outcomes, or whether adaptations to programmes might deliver greater impact.

The Trial Advice Panel offers a means of pooling expertise – allowing departments and programme areas with limited experience of running trials and impact evaluations access to advice and support from those that do. It also significantly enhances this offer by providing access to academic experts from across the UK that have first-hand experience of running high-quality trials. As a result, the panel reduces barriers to departments conducting or commissioning controlled experiments by meeting a gap in current provision.

How does the Trial Advice Panel operate?

The panel is set up to offer a rapid response to requests from departments and agencies. We know that one of the obstacles preventing more controlled evaluations in government is that civil servants can sometimes struggle to access the timely technical advice needed for policies to be designed in a way that makes testing and robust evaluation possible. Those seeking advice from the panel can usually expect an initial meeting with advisers within a week of their request being made (see Figure 2).

The support departmental teams receive is tailored to their individual needs. Teams are matched with Trial Advice Panel members who specialise in their area of interest. This could be a particular research method, analytical technique, or experience of designing trials in the same subject area.

The level of support teams receive is similarly bespoke. Panel members might simply be required to respond to a specific technical question via email, telephone, or a face-to-face meeting. Equally, they might provide

ongoing support throughout the lifecycle of a trial – starting by helping teams decide what sort of trial or test will generate the most useful results and ending with peer reviewing final reports.

Conversations with panel members are confidential. There is no obligation for departments and public bodies to follow the panel's advice and evaluations remain the sole responsibility of departments. A Steering Group convened by the What Works Team keeps the panel's activities under constant review.

“Being part of the Trial Advice Panel has given me unique insight into the trials that are taking place in government and it has been a pleasure to work alongside different departmental teams with the design and analysis of these trials.”

**Professor Catherine Hewitt,
University of York**

Figure 1: Key milestones in the development of the Trial Advice Panel



Figure 2: User journey with the Trial Advice Panel (TAP)

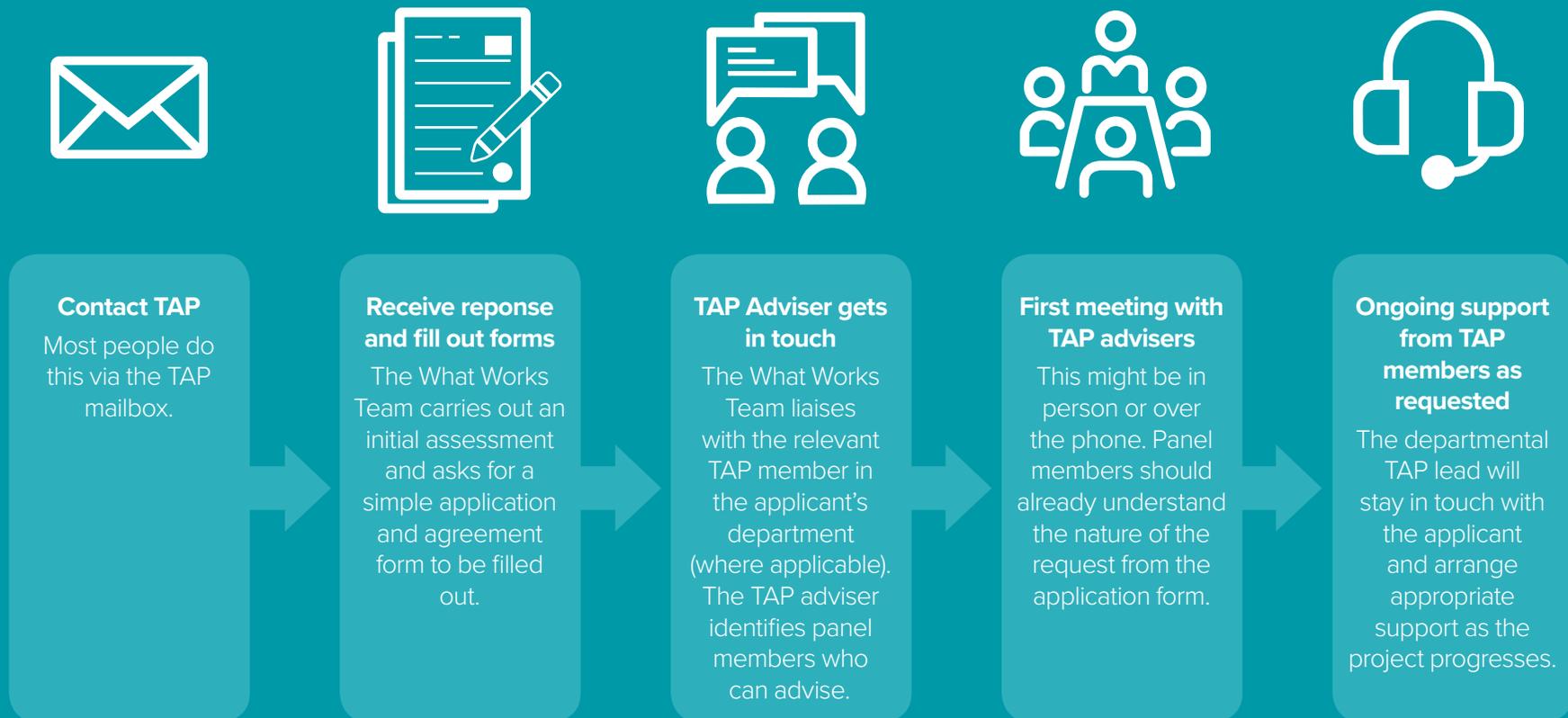
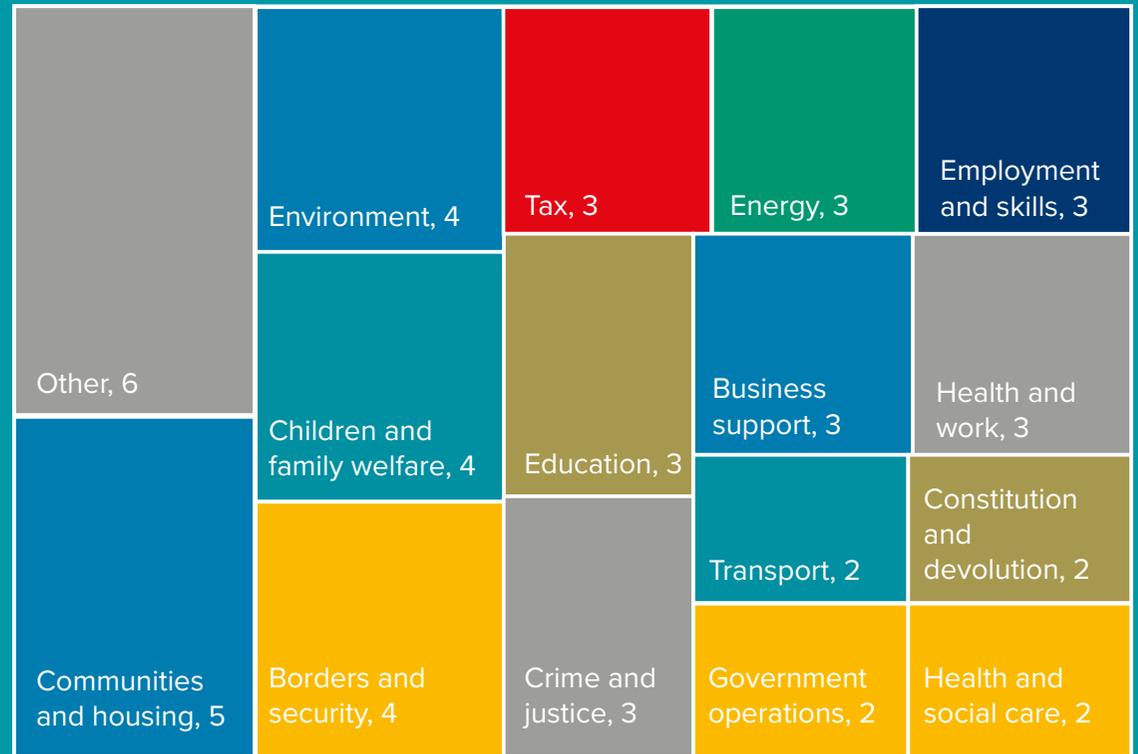


Figure 3: Trial Advice Panel at a glance: composition and activities

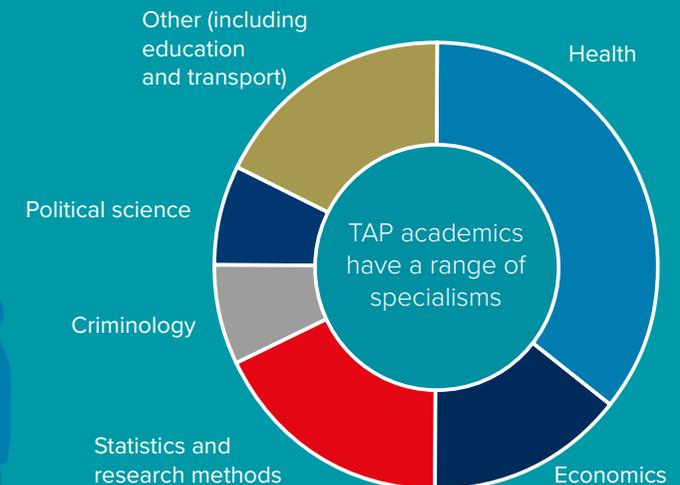


52 projects supported over **3** years



More than **800** civil servants receiving trial design advice from panel members via the Future Leaders Scheme

28 academic experts + **18** government experts



“I have found being able to influence policy-making through sharing not only research findings but expertise on the methods and processes of rigorous research incredibly rewarding.”

Dr Riikka Hofman, University of Cambridge

What has been the impact of the Trial Advice Panel?

Since the panel was launched in 2015, it has assisted 52 projects across 18 departments and public bodies. While many of these projects are still in the field, we have already seen panel-assisted trials and impact evaluations inform policy and practice.

In March 2018, for example, the Ministry of Housing, Communities, and Local Government’s (MHCLG) Integrated Communities Strategy Green Paper included a suite of proposals to increase community-based English language learning provision. This followed a successful wait list control trial, supported by the panel, that established a causal link between language teaching and social cohesion in communities with a high concentration of people with limited or no English (see p.16). Similarly, panel-assisted projects have informed spending decisions (e.g. investment in tackling waste crime) and business practices (e.g. communications to self-assessment tax payers).

Case studies of individual trials appear in Part 3 of this report. But looking across the

projects supported by the panel, a number of important contributions stand out:

1. Helping embed a culture of experimentation in some areas of government

One of the panel’s most significant contributions has been to build the capacity of civil servants to run their own controlled experiments. TAP advisers have helped get trials off the ground in departments and agencies with little experience of conducting them. This includes supporting MHCLG’s first ever randomised, wait list control trial (see p.16) and Ofgem’s first large-scale RCT (see p.17). Even in programme areas such as tax, where there is a longer history of conducting trials, the panel has facilitated more ambitious experiments including HMRC’s largest ever RCT.

Many projects have set new benchmarks for evidence quality and prompted departments and agencies to develop further controlled experiments, making good use of newly acquired skills. Far from these trials simply being one-off attempts to understand what works, follow-on experiments are helping

decision makers understand whether results can be replicated in different contexts and at different scales. This more systematic, ‘test, learn, adapt’ approach is supporting continual improvement by building on initial findings and testing new variants (see Section 3).

2. Extending the use of empirical methods into more complex policy areas

It is more challenging to design experimental trials and impact evaluations in some policy areas than others. So it is no coincidence that we have seen many more trials in areas such as tax and employment support. These programme areas have the advantage of existing administrative data that can be used to measure key outcomes – significantly reducing the time and cost associated with running trials.

However the Trial Advice Panel has helped Whitehall departments introduce trials for the first time in more sensitive and complex policy areas. The Cabinet Office’s end-of-life support trial investigated whether befriending services improved the quality of life of terminally ill people as well as reducing the burden felt by family members caring for their relatives.

“In 2016 the Trial Advice Panel supported the largest RCT that HMRC had ever run, which tested the effectiveness of different messaging to self-assessment customers. We met with advisers several times over a 6-month period to discuss and solve a range of technical and implementation challenges. The benefit of using the panel was felt beyond the trial, extending to other work and helping build the competence of our team. Our experience has encouraged us to put further trials forward to the panel.”

Joseph Sherlock, Principal Behavioural Science Advisor, HMRC

“I have very much both enjoyed and benefited from my participation in the Trial Advice Panel. Most importantly, as a result of the interaction with government officials engaged in policy planning and evaluation, I have developed a much better understanding of how to design feasible experiments that can actually answer important policy questions. I also developed an appreciation for the impressive talent that makes up the UK Civil Service. The officials I interacted with were bright but also quite demanding in a positive sense, forcing me and my colleagues here at Oxford to give serious thought to challenging design and data analytics questions.”

Raymond Duch, Director, Centre for Experimental Social Science, University of Oxford

Other areas include family welfare, community cohesion, and border security (see Figure 3).

3. Advising departments when not to use experimental methods

A successful outcome for the Trial Advice Panel does not necessarily equate to a department or public body proceeding with an experimental trial. The panel has also played an important role in advising teams when a trial is not appropriate – for example, when it would not be possible to recruit enough participants to generate meaningful results.

Equally, while RCTs can often be the best way of determining whether a policy or programme is working, this is not always the case. The panel has also helped teams explore different evaluation options involving a range of quasi-experimental methods (see Appendix A). This includes the Troubled Families Programme administered by MHCLG. It uses data matching techniques (propensity score matching) to compare the outcomes of families on the programme to those outside of it with similar characteristics.

4. Raising awareness of empirical methods

Making sure that civil servants understand empirical methods is critical to stimulating their interest in trialling and evaluation. The Trial Advice Panel has assisted by helping in the delivery of training and coaching.

Since 2017, panel members have supported the delivery of the Civil Service Future Leaders Scheme. The annual intake of approximately 400 participants are divided into groups and tasked with designing their own experiments. At the mid-way point, panel members offer groups advice and guidance to aid the further development of their proposals. Past projects have ranged from testing interventions to increase the uptake of Shared Parental Leave to the use of apprenticeships to reduce reoffending.

5. Encouraging academic research that meets the needs of decision makers

By providing a mechanism for academics to engage with the policy development process, the Trial Advice Panel has also given academic members of the panel important insight into the needs of decision makers. For some, this has informed their approach to research.

Part 3: Case Studies

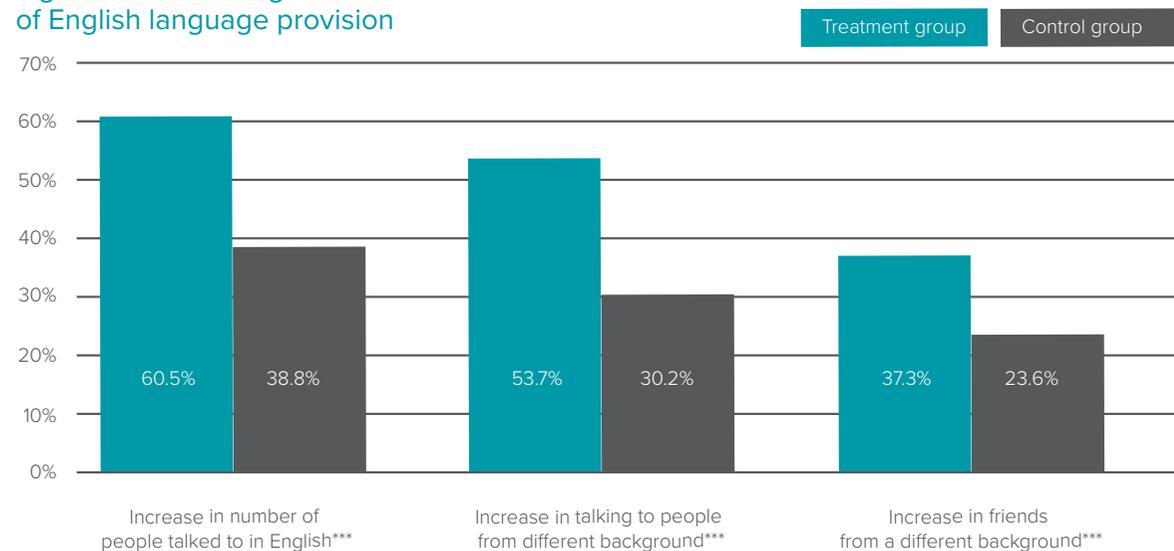
Building integrated communities through English language provision

High-quality studies on effective ways of enhancing community integration are few and far between. But in 2016, the Ministry of Housing, Communities & Local Government launched a pioneering trial – the department’s first ever randomised, wait list

control trial – to test a long-held assumption that learning English leads to greater social cohesion. The Trial Advice Panel provided end-to-end support.

The trial involved 527 participants with very low levels of English language proficiency spread across five areas in England. Participants were randomly assigned into

Figure 4: Social integration effect of English language provision



Source: Ministry of Housing, Communities and Local Government, 2018 ⁶

⁶ Ministry of Housing, Communities and Local Government (2018) Integrated Communities Strategy green paper, <https://www.gov.uk/government/consultations/integrated-communities-strategy-green-paper>

“Having the input of the panel at the outset was vital to bottoming out the design of the experiment. The panel’s involvement increased the confidence of our project partners and provided officials here with the assurance that we were drawing on the best expertise available. We have learned a lot from the Trial Advice Panel’s input, which we have shared with colleagues here in MHCLG and across other Whitehall departments. We look forward to working with the panel in the future.”

Dr Maria O’Beirne, Senior Analyst, Ministry of Housing, Communities and Local Government

“The findings of the trial allowed the Department to be confident in its support for community based approaches to integration and also provided a clear example of the rigorous approach to evaluation we propose to take more widely across a range of different integration interventions. It has set a new benchmark for the standards we want to apply to determining what works as we take the new integration strategy forward.”

Stephen Aldridge, Director for Analysis and Data, Ministry of Housing, Communities and Local Government

two groups. One group was given immediate language support via classes and conversation clubs while the other (the control group) received support once the trial had ended.

Course participants not only achieved far better test scores in written and spoken English, but significant differences were observed in relation to social integration outcomes such as friendships formed with people from other cultures (see Figure 4).

This evidence now forms a core strand of the department’s Integrated Communities Strategy green paper, which includes a suite of proposals to increase access to English language provision in local communities.

The success of the trial has also encouraged the wider use of experimental methods in the department, including the flagship Housing First pilots announced in the November 2017 budget.

Helping electricity and gas consumers find cheaper deals

In 2017, the Office of Gas and Electricity Markets (Ofgem) – the regulator set up to protect the interests of electricity and gas

consumers – launched its first large-scale RCT with the assistance of the Trial Advice Panel. It was part of a programme of trials aimed at improving consumer engagement in the retail energy market.

At the time estimates suggested that 14 million households could reduce their energy bills by more than £200 a year by switching to the best deal on the market (and 9.5 million of those could save more than £300).⁷ But a lack of consumer engagement was stifling market competition and leaving households on more expensive default tariffs.

Ofgem's new Behavioural Insights Unit, supported by the Behavioural Insights Team, launched a trial to test the effectiveness of customised standalone letters alerting consumers to the availability of cheaper tariffs.

Around 150,000 households involved in the trial were randomly assigned to receive one of the following interventions: (1) a letter from their own energy supplier with information about cheaper tariffs being offered by other providers; (2) a letter from Ofgem with information about the cheaper tariffs being offered by alternative suppliers; or (3) no letter (i.e. the control group).

⁷ <https://www.gov.uk/government/publications/household-energy-savings-through-switching-supporting-evidence/many-households-could-save-around-200-per-year-through-switching-energy-supplier-basis-for-claim>

“In the early days of establishing Behavioural Insight capability Ofgem found the input of one of the academics from the Trial Advice Panel very beneficial. He provided quality assurance and advice at various stages of our first large-scale RCT – the ‘cheaper market offers letter trial’. Through his contacts we were also able to seek independent ethical advice. His input allowed us to feel reassured that the design was appropriate and that we had not overlooked anything important from a methodological perspective. He also reviewed our report for publication and provided some helpful pointers which will continue to be referred to as we take forward future trials.”

Beth Moon, Head of the Customer and Behavioural Insight Team, Ofgem

“The trial was the first time Ofgem worked directly with suppliers to run a trial at scale. It showed that a simple, letter based intervention can encourage customers to switch away from expensive tariffs. It proved the value of trialling to the organisation, and led to the creation of the much larger and more complex CMOC trial.”

Joe Perkins, Chief Economist, Ofgem

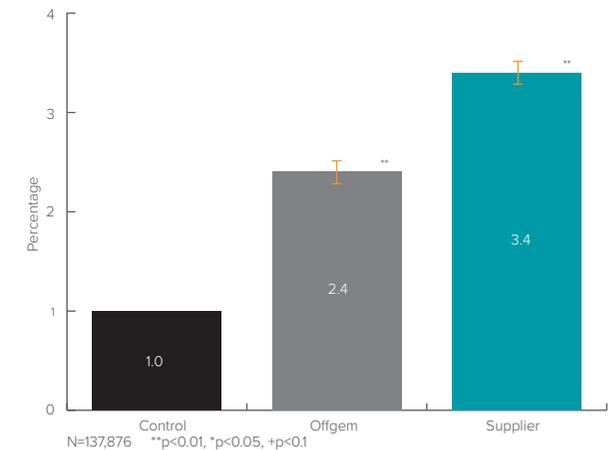
After monitoring consumer behaviour for 30 days, key findings included:

- The letters increased the rate of switching, which was 1% in the control group and an average of 2.9% across the two groups receiving letters. In terms of numbers, more than 1,700 customers switched as a result of the letters.⁸
- Who delivered the message was important. The supplier-branded letter had a greater effect, with 3.4% of customers switching in comparison to 2.4% of customers receiving the Ofgem-branded letter (see Figure 5).
- The relative impact was greater on more disengaged customers. Among customers that had been on the same tariff for 3 years, Ofgem letters tripled switching rates while supplier letters quadrupled rates.
- The letters helped customers secure better deals. In contrast to customers in the control group that switched, customers receiving letters saved £50 more on average.

Ofgem is modelling a ‘test, learn, adapt’ approach. The Ofgem Behavioural Insights Unit has built on these results and developed a more extensive trial that

involves new variations on the letter and more participants and suppliers. This is will help verify the result of the first trial and fine-tune the design of the intervention with a view to informing policy decisions.

Likelihood of requesting a switch within 30 days



Source: Behavioural Insights Team, 2018⁹

⁸ King, K. et al., (2018) “One letter that triples energy switching”, Behavioural Insights Team blog, <https://www.behaviouralinsights.co.uk/energy-and-sustainability/one-letter-that-triples-energy-switching/>

⁹ Ibid

Reducing fraud and environmental harm by tackling waste crime

Waste crime – that is, acts such as using and operating illegal sites, deliberately misclassifying waste to reduce disposal costs, or illegally exporting waste – harms legitimate business, local communities, and the environment, while defrauding the tax system.

In 2014, the Environment Agency was granted an additional £5 million to test and evaluate the impact of measures to tackle waste crime.

The team used a theory-based impact evaluation method to calculate the link between expenditure on enforcement activity and key outcome metrics (see Appendix A). The evaluation showed that over a two-year period the extra funding enabled the Environment Agency to:

- Stop an additional 530 illegal sites holding 429,000 tonnes of waste.
- Identify 630,000 tonnes of potentially misclassified waste and refer 63 sites to HM Revenue and Customs for investigation.
- Prevent the illegal export of 4000 tonnes of waste from 191 shipping containers.

The combined benefits from these results were estimated at least £29 million, of which £23.5 million was additional tax revenue.¹⁰

The evaluation helped secure longer-term funding for the Environment Agency's waste crime activities from HM Treasury.

¹⁰ <https://www.gov.uk/government/publications/waste-crime-interventions-and-evaluation>

“We were delighted with the help of the Trial advice panel. Our quasi-experimental approach was complex and needed to be compatible with the Environment Agency’s operational priorities. We used the panel members to critique our evaluation design and discuss ideas - we focused on the complex elements of design, the practical limitations, and ideas for future work. Having the backing of the panel was powerful when presenting the results internally and externally. The members of the Trial Advice Panel also made themselves available after the initial meeting to provide assurance and technical insight.

The waste crime evaluation has been very useful for the Environment Agency. It has enabled us to quantify the benefits of our interventions and present a compelling story about their effectiveness to our stakeholders, whilst also highlighting areas where more can be done. The results also provided Government with the assurance they needed to support a longer term funding settlement for the Environment Agency to tackle waste crime.”

Matthew Hess, Evaluation Adviser, Environment Agency

“We approached the trials panel to look at some specific technical elements of the planned approach. We felt we would benefit from access to a level of subject specific knowledge which we did not have within our team. The panel were very helpful in addressing our specific questions and looking at the trial overall. It provided us with an additional level of assurance that we were proceeding in the right way.”

Nerissa Steel, Centre for Social Action, Cabinet Office

Using befriending services to improve end-of-life care

One of the earliest projects supported by the Trial Advice Panel was a small-scale Cabinet Office randomised wait list control trial to test the evidence behind community-based end-of-life support – i.e. the use of volunteers to supplement state provision.

The Cabinet Office’s Centre for Social Action was keen to understand the impact of befriending services for the terminally ill. For example, did they improve participants’ quality of life? Did they reduce the experience of loneliness and the burden felt by family members caring for their terminally ill relatives?

The 195 participants were randomly assigned either to receive the service immediately – across 11 NHS, hospice, and charity sites – or to wait for four weeks.

Trial Advice Panel members offered advice concerning eligibility criteria and consent, when to consider the trial complete, how to communicate with volunteer organisations (many of whom were not used to, or necessarily comfortable with, research

trials in this area), and how to liaise with the external organisations commissioned to evaluate the trial.

This exploratory trial was the first of its kind. While a larger trial is needed to detect statistically significant effects, the results pointed to the potentially positive influence of befriending services on slowing the decline in participants’ physical quality of life. The trial highlighted many areas for future investigation, such as the effectiveness of training for volunteers.

Encouraging learner drivers to practice more

Newly qualified drivers are more likely than other road users to be involved in collisions, especially in the first six months after passing their practice test. A recent evidence review suggests that more on-road practice before taking a test rapidly reduces this risk.¹¹

Interested in understanding whether behavioural insights interventions could improve road safety, the Department for Transport launched a large multi-arm RCT (58,179 participants), which sought to encourage learner drivers to gain more

¹¹ Pressley et al., 2016, A review of interventions which seek to increase the safety of young and novice drivers. TRL. Available from: <https://www.gov.uk/government/publications/review-of-interventions-to-increase-the-safety-of-young-and-novice-drivers>

on-road experience before taking their practical tests.

The trial made use of the test booking system operated by the Driver and Vehicle Standards Agency (DVSA). A total of 8 low-cost interventions – ranging from email reminders to changing the default suggested test date – were trialled to see what was effective at encouraging drivers to extend their learning period by booking a later test. The Trial Advice Panel advised on both the initial trial design and analysis of the results.

While several interventions were successful at the point of booking, after rebooking behaviour was accounted for, only one lengthened the learning period. This intervention involved an email communication two weeks before the test date that combined a safety message with instructions on how to reschedule if desired (see Figure 6).

As a result of the trial, DVSA are looking into the possibility of making changes to their test booking system to enable the delivery of emails with safety messages. DVSA are also considering how behavioural insights could be tested at other contact points with novice

drivers or combined with other road safety initiatives to have a greater impact.

Figure 6: Wording used in 'safety message' email communication

*One in five new drivers has an accident within six months of passing their test. Practising more before your test could potentially be lifesaving. If you do not feel fully prepared, you can rebook your test for a later date before XX/XX/XXXX without losing your fee. One in three learner drivers reschedule their test, the majority of these delaying their test. To rebook visit <https://www.gov.uk/change-date-practical-driving-test> and follow the simple steps.*¹²

“The Trial Advice Panel gave us the confidence to design the trial in-house without a big budget. The panel provided quick access to a valuable network of experts and helped ensure we had the right skills on board to design a robust RCT and analyse the trial with the right statistical methods. One positive consequence of working with the panel members was that skills and capability were built within DfT to run and design further similar trials, developing talent in the team.”

James Canton, Principal Research Officer, Social and Behavioural Research, Department for Transport

¹² Department for Transport (2018) Learning to drive messaging trial, <https://www.gov.uk/government/publications/behavioural-insights-interventions-to-encourage-learner-drivers-to-practise-more>

What to look out for

Most of the trials and impact evaluations that the panel has supported are still in the field. Many of these will wrap up in the next few years, including:

■ Troubled Families Programme

The Troubled Families Programme (2015-2020), run by the Ministry of Communities and Local Government, aims to provide integrated support to 400,000 families with complex needs. The Trial Advice Panel advised on options for generating a counterfactual and the national evaluation now uses propensity score matching techniques to compare the outcomes of families on the programme to those outside of it with similar characteristics.

■ Individual Placement and Support trial

NHS England is sponsoring a national research programme to test whether Individual Placement and Support (IPS) could improve health and employment outcomes for people out of work due to any health condition or disability.¹³ IPS is already an established evidence-based programme that helps people with mental health conditions into employment. It involves intensive

pre-employment and on-the-job support that is coordinated with health services. The Trial Advice Panel has supported the design of an RCT under this programme that is currently underway in Islington.

■ Bikeability scheme

The Department for Transport is currently evaluating Bikeability, an existing national cycle training programme in schools, and Bikeability Plus, which is a new suite of enhanced training modules based around the core Bikeability course. The scheme, funded through a grant provided by the department, is aimed at improving children's road awareness and encouraging more physical activity. The Trial Advice Panel has advised on evaluation options and peer reviewed the evaluation framework.

¹³ Islington Clinical Commissioning Group (2017) Adult Joint Commissioning Strategy, <http://www.islingtonccg.nhs.uk/Downloads/CCG/Our%20Work/Adult%20Joint%20Commissioning%20Strategy%202017-21.pdf>



Conclusion

The Trial Advice Panel is a key cross-government resource, helping make experiments happen. Of the more than 50 projects that the panel has supported since 2015, many are in programme areas where our knowledge of ‘what works’ was previously very limited.

The technical support provided by the panel has helped build internal capacity within government and enabled trials that have set new standards for the quality of evidence that decision makers should demand. Particularly gratifying is that a number of the trials assisted by the panel – in areas such as energy markets, road safety, and community integration – have prompted departments and agencies to embark on ongoing and more ambitious programmes of testing (both with and without further Trial Advice Panel support).

We should not be complacent. There are still many policy areas that could benefit from a greater commitment to experimentation. Equally, even when trial results clearly show that some interventions are more effective than others, practice can be slow to change.

There is also much to learn from overseas. Other countries have taken significant strides in the past few years. Governments in Australia, Canada, Finland, and the United States, for example, have recently established their own infrastructure to increase the number and quality of experimental trials taking place across their programmes and services.

Like the UK, the US federal government in particular is making considerable use of academic expertise. The Office of Evaluation Sciences (OES) runs a fellowship scheme that brings academics into government on secondment to help federal agencies conduct controlled evaluations. Since the OES was established in 2015, its staff and the academic fellows working alongside them have supported more than 50 projects across a dozen agencies.¹⁴

A key challenge for the civil service in the years ahead is how to embed a culture of experimentation more widely across government. The growing use of experimental methods in some policy areas and public services gives us every reason to

be optimistic. But it will require many more civil servants to consider how much they really know about the effectiveness of the policy and programmes they are working on and whether better testing and evaluation would help them answer those questions. The Trial Advice Panel will continue to be on hand to help.

To contact the Trial Advice Panel, email **trialadvicepanel@cabinetoffice.gov.uk**

¹⁴ Office of Evaluation Sciences (2018) ‘Work’, <https://oes.gsa.gov/work/>

Appendix A: Summary of methods covered by the Trial Advice Panel

The Trial Advice Panel advises departments and agencies on the use of randomised controlled trials as well as a wide range of quasi-experimental methods.

Randomised Controlled Trials (RCTs) involve randomly assigning participants to either a treatment group that receives an intervention or a control group that does not. The difference in the outcomes of both groups is then measured and analysed after a period of time to determine the effectiveness of the intervention.

Well-designed RCTs are usually the most accurate way of determining whether an intervention is working. However RCTs are not always feasible, often for practical or ethical reasons. In these circumstances, there are a variety of quasi-experimental methods that can be used to estimate the effect of an intervention. Quasi-experimental methods involve creating a comparison group that is not the result of random assignment. These methods include:

- **Stepped-wedge Designs or Wait-list Designs (sometimes called “phased**

introduction”): In this method, the delivery of the intervention is staggered over time so that those who have not yet received the intervention can be used as a control group. While the order in which participant groups receive the intervention can be randomised, this method is often used where randomisation is not possible.

- **Regression discontinuity design**, which can be used when a cut-off point, such as income or age, is used to decide who is eligible for an intervention (the treatment group) and who is not (control group). The population immediately above and below the qualification threshold are typically similar and can be compared to estimate the effect of the intervention.
- **Difference-in-differences:** This technique typically uses longitudinal data to compare outcomes between a treatment group and a control group that have historically followed the same trend (such as two towns whose employment rates have remained parallel over a period of time). If the outcomes for the two groups differ following an intervention (e.g. the opening of a new business park), the change in the size of the difference can be used to estimate the

effect of the intervention (hence “difference in difference”).

- **Propensity score matching**, which is an option when there is a large dataset available that contains information on individuals (or organisations or places) that receive an intervention and those that do not. The technique involves building a model that predicts an individual’s likelihood of being exposed to an intervention based on observable characteristics (e.g. age, gender, and employment status). The ‘propensity scores’ generated via this process are used to create comparison groups that enable the effect of the intervention to be analysed. This happens by matching beneficiaries and non-beneficiaries of the intervention that have similar scores and comparing their outcomes.

The Trial Advice Panel has also helped civil servants infer the impact of policies and programmes by using **theory-based impact evaluations**. This approach uses a range of techniques, such as regression analysis, to test the links between actions and outcomes, typically using a Theory of Change model. If the underpinning logic can be robustly tested, it is possible to estimate impact.

Appendix B: Trial Advice Panel Members

Our sincere thanks to past and present members of the Trial Advice Panel:

Academic members of TAP:

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