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Evidence-based policing (EBP)

Student Notes

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Evidence-based policing (EBP) Student Notes

These student notes are written to support the Learning Objectives for the “An Introduction to Evidence-Based Policing” module of the pre-join (CKP) course and the IPLDP for new policing recruits, which also forms part of the National Policing Curriculum.

1. Introduction

This module introduces the concept of evidence-based policing and explains the benefits of identifying and using evidence-based approaches to inform actions and decision-making in policing. Many public sector professions (e.g. nurses, teachers) are increasingly using evidence to: increase their understanding of problems; to improve the effectiveness of their policies and practice; and to use their resources (e.g. people and finances) in the most efficient way. Within the public sector, evidence-based practice has its roots in healthcare, where these types of approaches have been used for over a decade, for example in organisations such as National Institute for Health and Care Excellence (NICE). NICE develops guidance and quality standards for health and care based on the best available evidence to ensure that health professionals have access to information on the best possible medical treatments, alongside their own professional expertise.

More recently, the UK Government has set up a What Works Network which aims to support policy makers and practitioners from across a range of sectors to develop and use evidence to inform decisions to improve public services. The College is part of this network and is working to support policing to develop and use evidence of what works, and to ensure that national standards are based on the best available evidence.

2. What is evidence-based policing (EBP)?

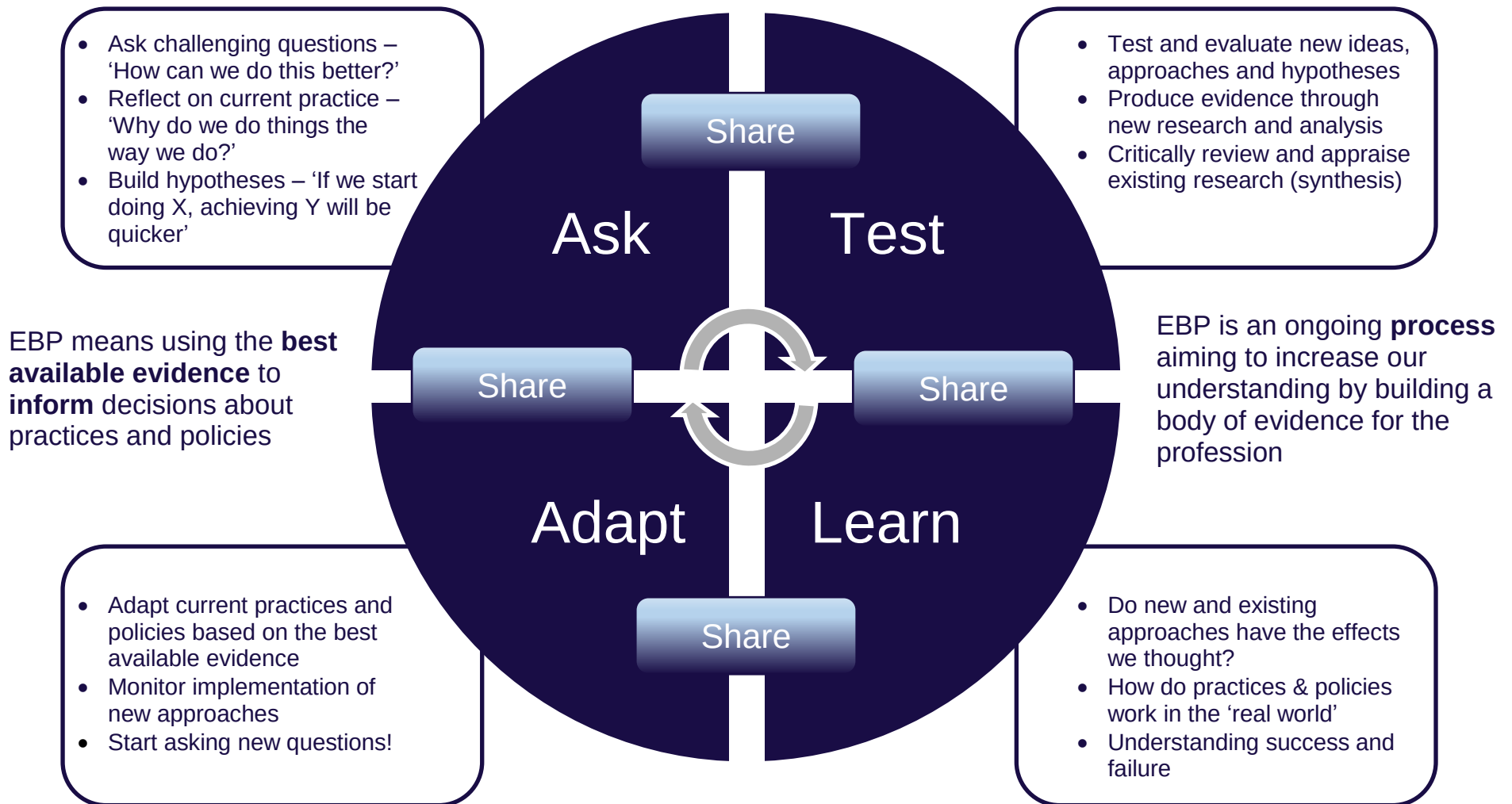
Evidence-Based Policing (EBP) can be understood as a problem-solving cycle that involves police officers and staff using and creating the best available research evidence to inform or test policing policies, decisions and practices.

The overall aim of evidence-based policing is the ongoing improvement of professional practice through using systematic research evidence alongside professional expertise.

The problem-solving cycle follows the basic scientific model and central to the approach is the collection and analysis of information and data to understand problems better, plan appropriate responses, measure (through evaluation) the effects of these responses and then adapt police activity. One way of framing this cycle is 'ATLAS': Ask, Test, Learn, Adapt, Share (see Figure 1). The National Decision Model, or the SARA (Scanning, Analysis, Response and Assessment) approach (developed by Eck and Spelman) are alternative ways of thinking about an evidence-based approach.

Figure 1: The ATLAS model – Ask, Test, Learn, Adapt, Share

What is EBP? Introducing “ATLAS”...



The problem-solving cycle using ATLAS

Ask - The start of the problem-solving cycle involves asking questions that will help to understand a particular problem or area of policing better and then using this understanding to develop a theory (or hypothesis) about the effect of doing things differently. For example, force data might suggest that levels of ASB are increasing in an area over the past six months, so you will want to ask a series of questions to help you to understand why this is happening, e.g. are there particular days or times of day where the problem is occurring? Are there particular locations? Analysing data and information to answer these questions will help you to be specific about the nature and extent of your problem and allow the development of an appropriate, targeted response. Existing research evidence can help in identifying an appropriate response as others may have already tested ways of dealing with the problem you have identified, which you can then use or adapt for your problem. If there is no existing evidence, or the evidence is not applicable to your context, then you should always try to test your response to make sure it is having the effect you want.

Test - This stage helps you to understand whether your response will achieve the effect that you wanted e.g. reduce antisocial behaviour. When testing a new response you need to be clear about what you did (how the response was implemented) and what change you are expecting to see and how this will be measured (the outcome). In the example of antisocial behaviour you could measure the number of ASB incidents recorded or number of calls for service. We will talk about different sources of research and how you might test a response later in these notes.

Learn - Once you have introduced your intervention then you need to measure your outcomes. The timing of your measurement will depend on how quickly you think your response will work and this will vary depending on the intervention. If your response to the ASB problem is to target patrol officers in areas with high numbers of ASB incidents, then you might expect to see a quicker effect than if your intervention is about setting up activities for those causing the ASB to move them away from the area.

Adapt - Once you have measured your outcome you should adapt your response to reflect what you found. If you find that your intervention isn't having any effect then you should stop using the resources in this way and use the findings to adapt your understanding of the problem. If you find that it is working then you might want to suggest trying it in areas which are experiencing similar problems.

Share - At all points in the process you should share, for example, your questions, your plans, your findings, your lessons, your experiences of change – and your new questions! By

sharing your questions and findings you might identify others trying to tackle similar problems or you can stop somebody using their resources on something you have found doesn't work.

Box 1 (below) provides a case study of a real world EBP project undertaken in Greater Manchester Police to measure the impact of using risk analysis to target officer patrols to reduce burglary.

Box 1: ATLAS Case Study – using prospective analysis to reduce burglary

Ask: In 2010, a police officer and analyst in a Basic Command Unit in Greater Manchester Police identified that they had a problem with burglary of houses in their local area. They identified that resources were being deployed to areas in an *ad hoc* way and there were no specific patrol plans targeting their burglary problem. Drawing on research that identified that offenders are more likely to return to an area they had recently burgled they decided to test deploying officers to locations that analysis identified as being at increased risk of burglary at specific times. Their hypothesis was that the officers would deter the offenders from returning to the area to burgle again.

Test: Officers in the particular ward were told where to patrol, based on analysis of burglary patterns. The approach was run for a 12 month period and data on the number of domestic burglaries occurring during that period was compared to the 12 months prior to the new patrol approach being introduced. Their most similar wards both in their own force and nationally were also used as a comparison group (more detail on comparison groups is provided later in these notes).

Learn: The results of the test showed a reduction in burglary compared with the 12 months prior to implementation and they outperformed their most similar wards. The results suggested that the improved and focused deployment of resources led to a reduction in offences.

Adapt: Based on the results of this test, a force policy was developed around tackling repeat victimisation and the same approach was tried with vehicle crime.

Share: Findings have been shared across the wider police service through conferences and published presentations. An article has also been published in an academic journal. Other forces have considered how they can adapt the approach for their local area.

What do we mean by 'best available' evidence?

Another part of using an evidence-based approach is to use the **'best available'** evidence. By 'best available' we mean evidence based on research which is **carefully conducted** and **peer reviewed**, **relevant** and **appropriate** to the question being asked, and **transparent** about how it has reached its conclusions, and about its limitations. It is important that you can clearly see why a particular piece of research was conducted, why the particular method was chosen, what challenges were faced when conducting the research and how these might have affected the findings, what analysis was undertaken and why and on what basis the conclusions were made. The Evidence for Policy and Practice Information and co-ordinating (EPPI) Centre, who are specialists in reviewing research, have identified the following five criteria that can help you to assess the quality of the reporting of a study's aims, context, rationale, methods and findings:

1. Were the aims and objectives clearly reported?
2. Was there an adequate description of the context in which the research was carried out (including a rationale for why the study was undertaken)?
3. Was there an adequate description of the sample used and the methods for how the sample was identified and recruited?
4. Was there an adequate description of the methods used to collect data?
5. Was there an adequate description of the methods used to analyse data?

Types of evidence

Evidence-based approaches will use different research methods depending on the questions posed, or the problem to be solved. The most appropriate type of evidence will depend on the sort of question you are asking.

- Systematically collected practice-based expertise can be helpful in identifying how a particular intervention or process is working or may work in practice and is useful in understanding the practical challenges to implementing a new approach. This type of evidence is useful for developing guidance around a new initiative, but will not tell you whether the initiative works.
- Quantitative research involves the generation of numerical information usually to identify the scale of a particular problem or perception, whether it varies across location or different populations and whether it is changing over time. Examples of police data that could be quantitatively analysed include recorded crime and incident data, calls for service, large scale victim satisfaction surveys.

- Qualitative research involves the generation of non-numerical information usually to answer questions about why a particular problem/issue is happening. Common qualitative research methods include interviews and focus groups e.g. with police officers or members of the public or observations of officers, for example undertaking a particular activity.

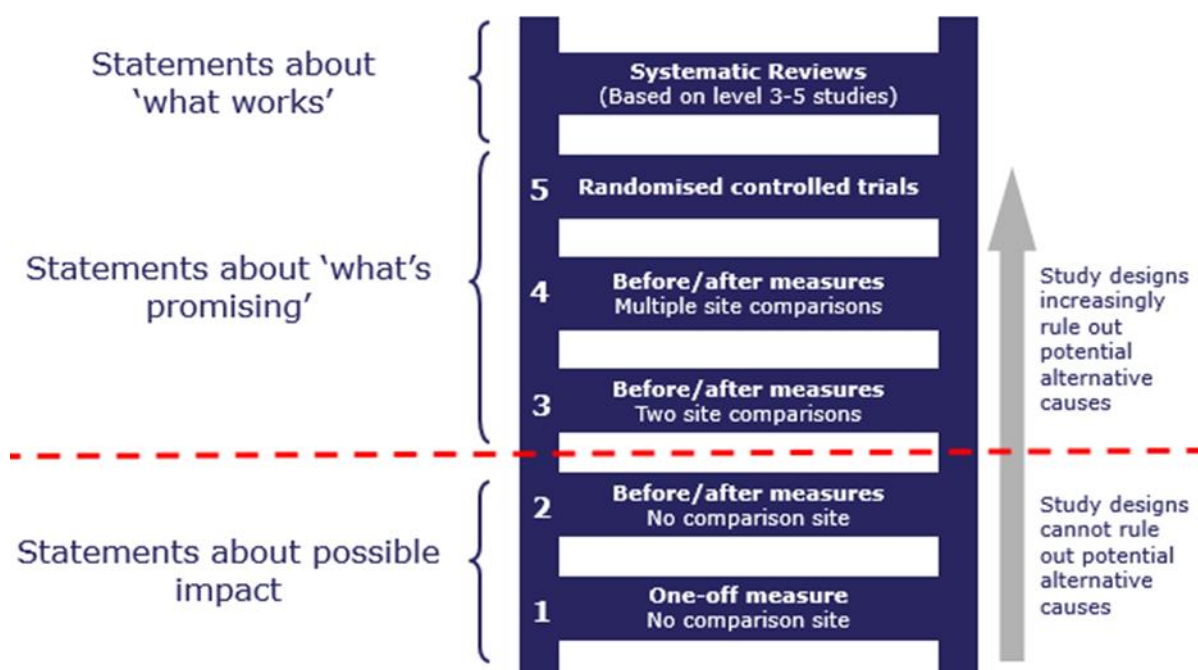
How do we know ‘what works’?

Where we want to know whether a particular initiative ‘works’ we ideally need **systematic review evidence** or, if there are no existing reviews, **individual impact evaluations**.

Impact evaluations indicate whether or not an intervention is effective. Without an evaluation it is impossible to know whether an intervention is having a positive effect on the problem you are trying to address. There are a number of methods that can be used in impact evaluations, which are illustrated in Figure 2. The higher up the ladder a study design is, the more confidence we can have that any observed change in outcome measures is due to our intervention (as long as the research is well conducted), rather than other potential alternative causes. This is because study designs that are above the red line in figure 2 have a comparison site or group which allow us to assess what might have happened without the intervention. All of the existing impact evaluations that are level 3 or above can be found in the Global Policing Database – <http://www.gpd.uq.edu.au/search.php>.

At the top of the ladder is the systematic review. Systematic reviews summarise the results of multiple carefully designed evaluations (level 3 and above), where they are available, and provides a high level of evidence on the effectiveness of interventions. All of the existing systematic reviews of interventions designed to reduce crime are summarised in the College’s Crime Reduction Toolkit – <http://whatworks.college.police.uk/Pages/default.aspx>.

Figure 2. The 'What Works' evidence ladder



What are comparison sites or groups and why do they matter?

A comparison group (sometimes called a control group) is a group or area that does not receive the intervention you are testing and as a result allows us to understand what would have happened if we hadn't introduced the intervention. The comparison group may either continue with the same activity that was already being carried out there ('business as usual') or could receive an alternative intervention.

There are many factors that affect policing outcomes e.g. burglary might go down because a prolific offender has been put in prison, or because the local authority has fitted improved locks to houses in a particular area, or because the weather has been particularly bad. You want to find out whether it is your initiative that has led to any changes in the outcome rather than any other external factors. To do this, the intervention has to be delivered to one group or in one area and then compared to a group which has not received the new approach, or is instead receiving 'business as usual'. The comparison between a group/area receiving the intervention and one continuing as normal allows us to estimate what would have happened without the intervention, a concept known as "the counterfactual". We can never truly know exactly what would have happened without an intervention, but a control group proves the best possible estimate.

There are three broad types of comparison groups (or study designs):

1. Random allocation
2. Matching
3. Simple comparison

Random allocation (randomised controlled trial)

Random allocation is the most robust way to establish a comparison group. If a decision about whether a person or an area receives, or doesn't receive, the intervention is purely by chance, this guarantees that any initial differences between the groups also result only by chance. Without random allocation there are likely to be systematic differences between the groups.

Random allocation involves one 'population' of people or locations (e.g. burglary victims, pre-identified hotspot areas, houses that have been burgled) being allocated randomly into an intervention group, where they will receive something new (such as advice on crime prevention or, in the case of hotspot areas, increased levels of police patrol) and a control group, where they will continue receiving policing activity as usual. The most important thing to remember with random allocation is that once people or places have been assigned to a group they cannot change. If you change the groups this will alter the randomness of the random allocation and it will no longer be a valid randomised controlled trial.

See Box 2 for a description of a Randomised Controlled Trial. 'Test, Learn, Adapt: Developing Public Policy with Randomised Controlled trials' published by the Cabinet Office has a good description of RCTs and why they are important.

A matched comparison group

Creating a matched comparison group involves identifying similar people or locations to the people or locations in your intervention group. The matched people or locations may be taken from, for example, a different part of the force or from a different force altogether. It is important to match the groups on important characteristics that might affect the outcome you are interested in. For example, finding a matched control group for a burglary intervention might include looking for locations with similar characteristics in:

- Levels of burglary
- Type of housing stock
- Nature of the area – whether they are rural or urban
- Type of resident population etc.

Matched comparison groups are useful when you cannot allocate people or locations randomly into groups. However, they are less reliable than randomised controlled trials, so you can have less confidence that findings are solely due to your intervention.

Simple comparison

A simple way of evaluating impact is to compare people or locations who have received the approach you are evaluating to people or locations who have not received the approach. The comparison group might be another area of the force not receiving the intervention, or an area from a different force. Unlike matching, you do not need any demographic data for this group, but this means it is less accurate than matching and that your findings are less reliable.

Box 2: Using a Randomised Control Trial – The Greater Manchester Police Procedural Justice Training Experiment

In 2012, GMP had concerns about levels of victim satisfaction following police contact. Staff in the Neighbourhoods, Confidence and Equality team thought that training officers in communication skills and the principles of procedural justice might improve the quality of officer interactions with the public, and lead to victims becoming more satisfied.

As they would not be able to train all officers at once, there was an opportunity to test the impact of the training through a randomised controlled trial (RCT) before deciding whether to continue to train other officers. Participants in the trial were randomly selected from a database of all serving response and neighbourhood constables in GMP. The selected participants were then either randomly assigned to either:

- The treatment group – to receive a training course; or
- The control group – to not receive training

The trial was designed to test the initial hypothesis and evaluate the impact of the training on officer attitudes, officer behaviour, and victim satisfaction. Officers in both the control and the treatment group were asked to complete a survey (attitudes); to be involved in role play exercises (behaviour) and victims who had contact with either officers in the control group or the treatment group were surveyed (victim satisfaction).

The results of the RCT found that officers in the treatment group scored higher than in officers in the control group in the outcomes of interest. That is, the training programme had a positive impact on officer attitudes, officer behaviour, and on victim satisfaction with police-public interactions. The training worked – the new approach had the desired effect.

Table 1 explains a hypothetical evaluation looking at the introduction of new technology (mobile data provision and smartphones) to give an example of the sort of findings, issues, and outcome statements that can be made based on the types of study design in the ladder. In this example: (1) the issue is that officers are felt to be spending too long at the station completing crime reports or being tasked; (2) the solution is to use mobile data allowing officers to complete crime reports and see new mapping data while out on patrol; (3) the assumption is that access to mobile data will enable officers to spend more time on visible patrol; (4) the evaluation is interested in the impact of the availability of mobile data on the time officers spend on patrol.

Table 1. Hypothetical evaluation of new technology in force

Level	Example finding	Considerations	Example conclusions
Level 1: One-off measure No comparison site	“Three months after the introduction of mobile data, officers were spending 55% of their time on patrol.”	• We don’t know what was happening previously so can’t tell if this is a good or bad proportion of time. • We have no measure of change. • We don’t know what would have happened without mobile data.	None This finding tells us nothing about the impact of mobile data on time officers spent on patrol.
Level 2: Before/after measure No comparison site	“Before the roll out of mobile data, officers were spending 50% of their time on patrol. Three months later this had increased to 55%.”	• We still don’t know what would have happened in the same period without mobile data in place (there is no ‘counterfactual’). • There may be other explanations for change; our ‘pre’ data may be from the middle of winter and ‘post’ data may be from summer when people are more likely to be outside.	The influence of other factors cannot be ruled out Findings show an increase in time on patrol, but we cannot conclude that this is due to the introduction of mobile data as other factors cannot be ruled out.

Level	Example finding	Considerations	Example conclusions
Level 3: Before/after measure Two site comparison	“In the Western District (treatment area, with mobile data) time on patrol increased from 50% to 58%. Over the same period in the Eastern District (comparison site, no mobile data) time on patrol increased from 50% to 53%.”	• We can now compare our intervention to ‘business as usual’. • But there are limits to how confident we can be about the comparison. • We can’t control for what may be important differences between the two areas. • There may be different caseloads, management styles and organisational cultures in the two areas in our study.	The change is likely to be a result of mobile data being introduced, rather than other factors. This is a best case scenario if the impact evaluation has been supported by qualitative research to identify what might have explained the increase in both areas - this is known as a process evaluation. Findings suggest a greater increase in time on patrol where mobile data was provided, though other factors may have had an impact on this outcome (a matched comparison would allow us to be more confident than a simple comparison).

Level	Example finding	Considerations	Example conclusions
Level 4: Before/after measures Multiple site comparisons	“In Boroughs A, B, and C (treatment areas, with mobile data), the average time on patrol increased from 50% to 59%. Over the same period, in Boroughs D, E, and F (comparison areas, no mobile data), average time on patrol increased from 50% to 52%.”	- With multiple comparisons, the potential impact of any structural or systematic differences between treatment and comparison areas are likely to be reduced. - While we still can't always control for important differences between treatment and comparison areas, through careful matching of sites based on key characteristics, we can begin to minimise the impact of these differences.	Evidence is consistent that the introduction of mobile data led to a positive effect. This is a best case scenario if the impact evaluation has been supported with a good process evaluation. Findings are consistent that areas where mobile data was provided saw a greater increase in time on patrol than in areas with no mobile data.
Level 5: Randomised Controlled Trial (RCT)	“Officers randomly allocated to the treatment group (to receive mobile data) on average spent 60% of their time on patrol. Officers randomly allocated to the control group (who did not receive mobile data) on average spent 52% of their time on patrol.”	- By randomly selecting officers, and randomly assigning them to either the treatment or control group, we ensure that any differences between individuals are distributed evenly between the two groups. - This approach gives us a ‘controlled’ experiment, where we can isolate the impact of our intervention – in this case, access to mobile data.	Use of mobile data directly resulted in an increase in officer time on patrol as alternative explanations for the change can be ruled out. Findings show access to mobile data directly resulted in officers spending more time on patrol. Findings of RCTs are context specific, and careful consideration needs to be given when importing interventions into new contexts.

Ethical considerations

Some officers and staff may feel it is difficult to justify only giving an intervention to some people or to some areas as it feels unfair. However, if we haven't evaluated an intervention we do not know whether it is actually beneficial. It is important to explain that we are evaluating a new intervention, not a better intervention, as we do not yet know that it will improve the outcome (and as we see later in Box 3, it could in fact be harmful).

3. Why is evidence-based policing important?

Some well-meaning interventions may have zero impact or worse... they may cause harm.

Evidence-based policing helps us understand which activities are effective, which have no impact, and, of particular importance, which may be harmful. It also helps us to identify areas of police practice where we don't have any robust evidence about what works, so can't be sure that the activity we are delivering is making any difference at all and is a good use of resources. EBP helps us go beyond 'common sense' approaches to test our assumptions and challenge received wisdom. In high risk and high harm areas, such as domestic abuse, this is particularly important. As new evidence comes to light over time, we need to be prepared to consider how professional practice might need to change. Evidence-based policing is important for a variety of reasons – consider the following:

1. Policing deals with some of the most vulnerable people in society on a daily basis. What are the risks if we don't have any robust evidence about what works, and what approaches we should be taking to minimise harm? How do we best understand and serve victims of crime if we don't understand them?
2. Police organisations (as well as our partners in the wider public sector) need to ensure we spend public money and use public resources in the most efficient way possible. How can we understand where to focus our resources without a proper evidence base and an understanding of how effective our activities are?
3. Technology is advancing at an increasingly rapid speed. How can we understand the benefits and limitations of new technology, such as body-worn video or mobile devices, without taking an evidence-based approach?
4. In some cases, well-meaning initiatives may have no impact at all, or worse, they may cause harm. We need to know if our actions deliver the outcomes we expect, and if the time and resources we commit to projects are worthwhile. Box 3 outlines one example of a 'common sense' intervention that actually ended up causing harm.

Box 3: Why does taking an evidence-based approach matter? Scared Straight Programmes**What is Scared Straight?**

Scared Straight originated in America as an initiative which organised visits to prison facilities by juvenile delinquents or children at risk of becoming delinquent. The aim was to deter the young people from a future life of crime by showing the reality of prison. Interventions included sessions in which adult inmates shared graphic stories about prison life. Other less confrontational methods and more educational sessions included inmates sharing life stories and describing the choices they made that led to imprisonment.

Following media accounts of the success of the programme it was soon replicated across America and similar programmes have since been used in other countries including in the UK.

But does it actually work?

Following a number of separate impact evaluations of Scared Straight programmes, a systematic review was conducted to draw the findings from all these evaluations together. The review found that 'Scared Straight' and other juvenile awareness programmes not only fail to deter crime but actually **lead to more offending behaviour**. Young people who go through such programmes are more likely to commit offences in the future than those who do not. In other words, doing nothing would have been better than exposing juveniles to these programmes.

There are many theories about why these programmes did not work, but the evaluations considered in the review did not include a process evaluation, and therefore cannot definitively explain why the approach failed.

You can find out more about Scared Straight interventions here:

[http://whatworks.college.police.uk/Research/Briefings/Documents/CoP\(What%20works\(online_Scared%20straightfinal\(VApril-14\).pdf](http://whatworks.college.police.uk/Research/Briefings/Documents/CoP(What%20works(online_Scared%20straightfinal(VApril-14).pdf)

4. When might you use an evidence-based policing approach?

EBP is a tool that can be used in a wide variety of contexts relevant to policing, not just crime reduction. We've already seen examples in these student notes of EBP being used to assess the use of new analytical approaches to target resources (Box 1), the impact of a training programme (Box 2), and offender management (Box 3). EBP approaches can also be applied to workforce issues, for example measuring the views and opinions of colleagues through staff surveys or focus groups; or organisational change programmes, such as a restructure or process change. Table 2 (below) gives examples of how EBP might be used in a number of different scenarios.

Table 2. Example of where an evidence-based approach might be taken

Situation	Example
Tackling crime	Testing a new approach to policing the night time economy (NTE), e.g. improved partnership working with the local council and licence holders, coupled with increased targeted foot patrol.
Tackling disorder	Understanding and addressing antisocial behaviour in your local area, e.g. talking to the community and 'offenders' to understand the problem and develop potential solutions.
Managing offenders	Testing the effectiveness of restorative justice approaches or Scared Straight programmes (see Box 3).
Engaging the public	Running public satisfaction surveys or speaking to the public in your area to understand their views and priorities.
Development of training	Testing the effectiveness of new or existing training programmes (see Box 2) to understand their impact on knowledge, attitudes and self-reported behaviour.
Changing processes	Understanding and addressing barriers in organisational processes and procedures, e.g. talking to colleagues across the organisation about how to improve or speed up the custody process so officers spend less time booking in offenders.
Introducing new technology	Testing the effectiveness of new technology (see Table 1) and understanding how technology might be practically used on the front line.

5. Stages of an EBP approach

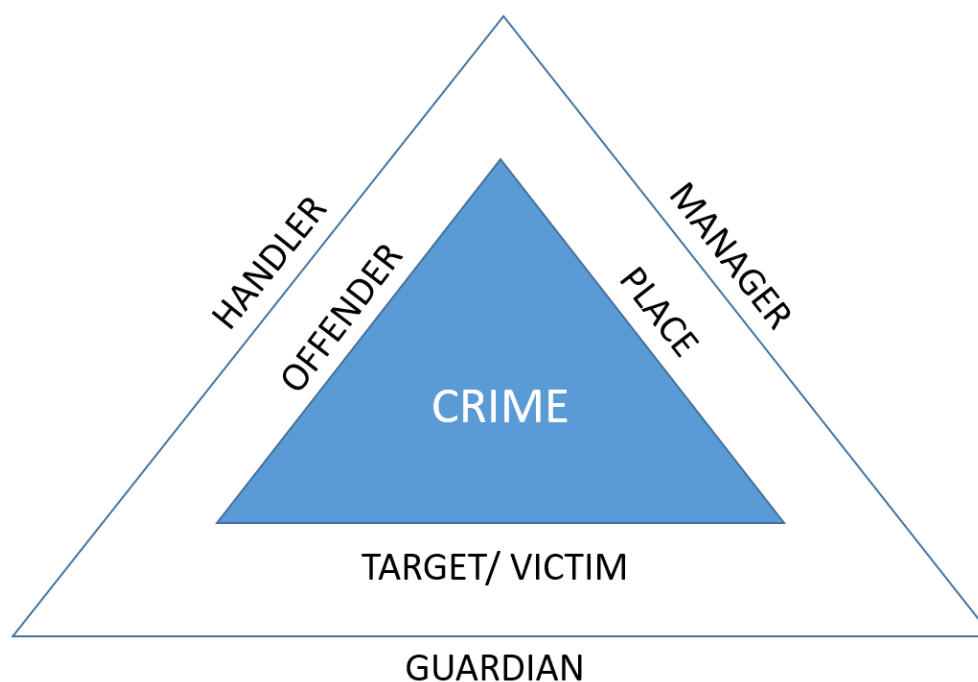
Applied in practice, an EBP approach aims to deliver continuous improvements in policy and practice through regular testing of, and learning from, police activities. This section will briefly set out the stages in taking an evidence-based approach using the ATLAS framework.

Ask

Proper Problem Identification

Often you will be seeking to solve a specific challenge or issue for your local area, and it is important to build a detailed profile of the problem you are trying to solve from existing data to help ensure you are getting to the root cause of the issue. Historically, policing has often been guilty of a 'rush to respond' or 'rush to solution' based on 'shallow problem solving' (see Weisburd et al). The 'Ask' phase of an EBP project focusses on proper problem identification and building a clear picture of the issue to be addressed. One useful tool to help with problem identification is the 'problem analysis triangle' (PAT – see Figure 3, below).

Figure 3. Problem Analysis Triangle



The problem analysis triangle is a useful tool for assessing your crime problem and making sure you have considered a range of possible causes for the problem you are seeking to solve. The triangle is based on routine activity theory (formulated by Cohen and Felson) which states that crime occurs when a likely offender and suitable target come together in time and space, and in the absence of a capable guardian. The offender, place, and victim are each on one side of the inner triangle. The outer triangle helps consider potential responses to our problem; so a guardian (e.g. a police officer, or a potential victim looking out for themselves) for a victim or target; a manager (e.g. a licensee or local authority) for a place; and a handler (e.g. parents, family members) for an offender.

To take an example, if our crime or problems of interest were alcohol-related violence in the night time economy (NTE) and increasing levels of theft of and from bags in pubs and clubs, then we may be interested in each of the sides of the triangle. Possible interventions might include:

- Seeking to improve the **management of places** such as nightclubs and bars by working with licensees to improve lighting, provide bag hooks on tables, and provide cloakrooms.
- Seeking to improve the behaviour of potential **offenders** by encouraging staff at bars to act as **responsible handlers** and refuse entry or service to intoxicated patrons.
- Seeking to provide **capable guardians** for **potential victims** by communicating warnings about the risks of thefts of and from bags, or the dangers of unlicensed minicab drivers.

The actual intervention that you would go on to use would depend on the nature of your particular problem, and more in-depth analysis should enable you to be more specific about what might be causing the crime. You can use existing data to understand your problem or you may need to collect new data. The types of information that you might want to identify in your analysis include:

- Specific categories/subsets of crime/incidents
- Long term patterns – is this a trend or a problem that has recently emerged?
- Hot/cold times – are there particular times of day/days of week the problem occurs?
- Type of locations/security/suitability – are there particular ‘hot’ locations/properties and do these have/not have features of ‘cold’ locations/properties?
- Nature of victimisation/experience
- Likely reasons/motivations
- Specific offenders/victims – age, gender, profession etc.

- Public's understanding and concerns

Partnership approaches are implicit in the use of the PAT. Police organisations will not always have access to all of the potentially relevant levers to help address a crime problem. Police responses delivered in isolation may end up focussed on predominantly enforcement-led approaches, which can struggle to have an impact if a problem is being caused by poor management of specific places, for example. A useful list of 25 techniques of situational crime prevention can be found online and can help you consider different approaches to crime reduction and problem-solving. (Multiple versions of the techniques can be found here: <http://www.popcenter.org/25techniques/>.)

Develop your hypothesis and intervention

Once your problem has been identified and properly investigated, you can develop your own hypothesis about what you think might address the problem. The next step is to then develop a response or intervention. Above we have considered a few potential interventions focussed on places, offenders, and victims respectively. If you are seeking to **test** the impact of an intervention, your response should clearly address the problem and be clear on the rationale or causal chain for any intended outcomes. An impact evaluation can then seek to **test** whether the police or partnership response (intervention) has achieved the intended outcomes and addressed the problem. You can use some of the sources listed later in these notes to help you to identify possible solutions that have been tested through existing research, but you will need to consider whether they would be suitable for your particular context and the nature of your problem.

Decide on your measure

When undertaking an impact evaluation it is critical to be clear about the outcomes you intend to measure and test before you begin your intervention. At this stage, you should decide on your **measure** – this is what you will use to assess whether an approach has been successful e.g. numbers of thefts or violent crimes.

Decide on your comparison group

You should also decide on your comparison group – this is to understand what would have happened if you did not implement your new intervention e.g. if you had 'hot' locations you could randomly allocate some to receive your intervention (treatment group) and some to the comparison group who will not receive the intervention. At a minimum you should measure what happened before and after you introduced your new intervention.

Test

Conduct a pre-test

You need to collect data on your selected measure in advance of implementing your new initiative to get a baseline. The baseline will form the starting point on your outcome measure and you need to collect this information for both the treatment group and in the comparison group. When you are using data like numbers of crime or incidents or call for services which can fluctuate over time, you will usually need to have the data available for a set period in advance of introducing an intervention and compare this with the same period after to control for the natural variations in the data.

Deliver the intervention

The intervention should be delivered as planned. Sometimes the intervention that is actually delivered varies from what was planned (either due to practical issues or sometimes people not understanding why they have to do things in a particular way). You should try to minimise any variation as much as possible and record exactly what happened. You should ensure that your comparison group or area does not receive the intervention.

Conduct a post-test

You need to collect data on your selected measure again after the intervention (or during the period of the intervention) to understand the impact. The post-test should cover the same length of time as the pre-test and needs to be conducted for both the treatment and comparison groups.

Learn

Analysis and interpretation

The most appropriate analytical approach will depend upon the type of data you have collected. If you have numerical (quantitative) data you will be trying to test any statistical differences in your data. As described above in the ladder of evidence (figure 2 and table 4), evaluations need to compare data from at least two points in time (and ideally across multiple sites) to start to tell us anything meaningful about the impact of our activity.

Report the results

It is important to report the results clearly so that others can understand what you did and what you found. At this point in the process you should be able to tell if interventions have

had the expected impact. Did your new approach have the desired effect? Did it make a difference? Whether interventions worked or not we should always report our findings, since learning that something is **not** effective is just as important as learning that it **is**.

Thinking back to our NTE example, you may have worked with partners and licence holders to introduce a breath test for intoxicated patrons with the aim of reducing violence in bars and clubs¹ – did this achieve what it set out to? The outcome measures you set in the ‘ask’ phase need to be examined here to see how the things look after your new intervention in comparison to your baseline data.

It’s generally advisable to do what is called a ‘process evaluation’ alongside any impact evaluation. Process evaluations involve techniques such as interviews and observations and are used to understand the views and experiences of people involved in the delivery of the intervention, as well as those directly impacted by the new approach. Process evaluations can help you to understand how your intervention worked in the real world and ensure that you identify, understand and assess the potential impact of any implementation challenges you may have faced.

Adapt

Use your findings

Based on your findings you may be in a position to suggest that policy or practice could be adapted to help reduce crime or achieve positive impacts in your area of interest.

Remember, not all activities that help with crime reduction will need to be delivered by the police – many partner agencies can contribute. A more detailed list of potential partners is outlined in section 5. If you do adapt practice based on what you have learned from your research, it’s important to monitor progress (using your original outcome measures as well as other relevant data) for a period of time to ensure that your expected outcomes are still being delivered. From here you can start asking new questions about how you might improve or adapt other aspects of ongoing police practice.

¹ This was tested in Devon and Cornwall – you can find out more here: <http://www.devonandcornwall-pcc.gov.uk/news-and-blog/devonandcornwall-pcc-news-blog/2015/02/success-of-torquay-breathboxes-could-see-scheme-spread/>

Share

Help others use your findings

Throughout the whole process of an EBP project, it's important you share your problems, plans, and findings. Many forces now have local or regional partnerships with universities to help support and promote research. When you start a project you can share your plans on the College of Policing Research Map or POLKA (the Police Online Knowledge Area), and you can get support through our ongoing programme of College Research Surgeries.

Sharing findings at the end of your project is important to help build the evidence base for the wider profession and ensure colleagues across the service can learn from your work. Organisations like the Society for EvidenceBased Policing can also provide advice and support, as well as the opportunity to share your work.

6. Developing and implementing strategies: some practical considerations

This section outlines some practical considerations for developing new interventions and it also provides examples of potential partners you might work with in addressing problems or issues in your area. By the end of your 'ask' stage, you should have a good understanding of the issue at hand and the available information about your problem. At this point you will need to work with policing colleagues and partner agencies to develop an appropriate strategy to tackle your specific problem. As part of planning your strategy there are a number of things you might want to consider.

The headings below are intended to act as prompts for the sorts of issues you will need to consider when developing new strategies on a case-by-case basis. For example, community policing interventions might involve a wide range of interested parties in addressing specific problems, while other situations may only require involvement of police-related powers and resources.

Who's involved?

In developing your approach to a specific problem it is important to consider who else within a force (e.g. analysts, specialist staff, senior officers etc) will need to support the work and which other partner agencies or organisations might be involved in implementing the strategy. Your options may be limited by the resources (time and money) available to you through the force and local partners. Early collaboration can help ensure that the aims and objectives of the intervention are realistic and meet the needs of all partners involved in the work. Examples of partners you might want to consider are listed below in table 3. The list is by no means exhaustive. A practical example of the value of working with other agencies can also be seen in Box 4.

Table 3. Examples of problems that might be addressed with the support of local partners

Partner	Problem	Response
Local council	Burglary in a local estate.	Replace or enhance street lighting. However, funds may be limited and changing priorities may impact on their ability to be involved in long term interventions.
Local schools/colleges etc.	Bikes being stolen from school premises.	School to host sessions that raise awareness and provide advice on bike security.
Local community	Increase in car crime on specific streets.	Taking part in Neighbourhood Watch schemes and taking precautions to minimise the likelihood of car crime.
Local religious group	Tensions between different groups within the community.	May play a role in spreading positive messages and calming tensions.
Local businesses	Increase in burglary and theft.	Pawn shops may have a role in preventing stolen goods being sold on.
Local charities and voluntary organisations	Increase in crimes connected to drug and alcohol dependency.	Programmes to support those with dependencies to reduce drug-related crime.
Other emergency services	Increase in arson during summer holidays.	Fire service may be able to run preventative education programmes.
Housing associations	Tenants involved in anti-social behaviour.	Aid in supporting, sanctioning or the removal of tenants who impact negatively on the local community.

Box 4: Working with others: Alley Gating (Sidebottom et al, 2015)**What is alley gating?**

Alley gates are lockable gates that are installed to prevent access by offenders to alleyways, such as those that run along the rear of older-style terraced housing. Typically used to prevent burglaries, they can also prevent other crimes such as anti-social behaviour by limiting access and controlling space.

Overall, the evidence suggests that alley gating is effective in reducing crime but their effective implementation requires working with residents and local authorities.

Consulting residents

The effectiveness of alley gating as a crime prevention tool is dependent on the way residents interact with the gates once in place. Residents are encouraged to be responsible for closing gates and controlling access, as well as viewing the alley as their territory. This behaviour is associated with an increase in surveillance by residents, which may subsequently reduce crime.

This means that the local community will need to be consulted on the introduction of alley gating in their neighbourhood. If residents are collectively willing to use alley gates effectively, they are more likely to reduce crime.

The nature of the discussion with local residents will vary depending on whether the alley is owned by residents, a housing association or is on a public right of way. Depending on who the owner is, it may be more or less complicated to obtain permission to install alley gates.

Notifying the local authority and emergency services

Local authorities may need to access alleyways for refuse collection, which is important in making sure a neighbourhood looks well cared for and crime free. The local authority and emergency services should be involved at the earliest possible stage to ensure that services are not compromised.

You can find out more about this research into Alley Gating here:

http://whatworks.college.police.uk/About/Documents/Alley_gating.pdf

What's involved?

When working on new approaches or interventions, either just within your force or with partners, it's important to think carefully about the roles and responsibilities each organisation or individual will have in implementing a new approach. Developing an action plan or project plan outlining the problem being addressed, the aims of the strategy or intervention, the role of each of the other interested parties, timescales for the project, and agreed outcome measures is generally good practice². Table 4 below lists some of the issues you might want to consider in developing your plans in your force and/or with relevant partners.

Table 4 – Checklist of considerations

Question	Considerations
What is required of each of the interested parties?	Have the roles and responsibilities of those involved in the intervention been clearly outlined and defined? Failure to do this before the intervention starts can lead to implementation failure and undermine your strategy.
What are the priorities of the other interested parties?	Police forces and partner organisations have limited resources in terms of staff, time and money. Understanding and working to address the priorities of colleagues and partners can help ensure greater buy-in and ongoing support for the planned intervention.
What are the potential cost implications?	What are the likely financial costs of the intervention, including any extra officer time, etc.? Who will pick up various aspects of the overall cost?
What other resources are going to be required?	What are the other resource requirements of the intervention resources? Can the force and partners support these requirements? If not, can a smaller or shorter project be run instead?
How long is this intervention going to last?	It's important to strike a balance between the practicalities/ resource implications of your intervention and the need to collect enough data to properly measure impact or build understanding. Have these discussions, and be clear about when you need your findings, early in your planning stage.

² An example of a project template is included in Appendix A.

Question	Considerations
How will you measure impact?	Be clear about your outcome measures before you start your intervention and make sure these can be compared to meaningful and robust baseline data. Make sure the outcome measures are suitable for all partners.
How are the objectives going to be measured?	As with carrying out any form of research or assessment, not every measure is going to provide the information that is required and therefore the tools that are used to measure the objective to see if it has been achieved need to be fit for purpose.
What are your main risks and contingencies?	At the planning stage it is useful to consider issues that might impact on the implementation of the approach, identifying risks and prospectively planning contingencies can help minimise the impact of potential disruptions to the project. See also the 'implementation challenges' section below.
What is the local context?	Where you are seeking to test an intervention or approach that has worked elsewhere it is important to consider if local circumstances for your or your partner agencies mean you should adapt your approach.

7. Data sources

To identify or understand a problem, or to measure the impact of a particular intervention you are introducing, you may need to review data collected by others (known as secondary data). Typical examples include existing surveys, census data, or information collected by government departments or agencies. There may also be a wealth of data collected locally by your force and local partners. If you are working to reduce violence in the Night Time Economy, you may be interested in accident and emergency admissions from local hospitals, for example. Table 5 below outlines places where you might find useful data and describes the type of information you might find.

To find published studies, you can use tailored search engines such as Google Scholar or register with the National Police Library to gain access to a range of eResources, including searchable databases of thousands of journal articles (see useful resources in section 9). For existing systematic reviews of interventions to reduce crime use the [College's Crime Reduction toolkit](#). For existing evaluations of policing interventions use the [Global Policing Database](#).

Table 5. Some National data sources

Data	Description
Crime Survey for England and Wales (CSEW) http://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice	The CSEW is a longitudinal survey that measures crime by asking members of the public about their experiences of crime over the past 12 months. This means it includes crimes that may have been experienced but not reported to the police.
Police recorded crime data http://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice	Data from the Home Office shows the number of police recorded crimes, percentage change from previous year and rate per 1,000 population by offence group and police force area.
Her Majesty's Inspectorate of Constabulary (HMIC) https://www.justiceinspectorates.gov.uk/hmic/data/	Data on a range of topics is publicly available on the HMIC website. For example, data on anti-social behaviour, domestic abuse, and the Police Report Card. This includes force level data collected from forces and independent surveys on particular issues.

Data	Description
Criminal justice statistics https://www.gov.uk/government/collections/criminal-justice-statistics	The Ministry of Justice publishes statistics on a variety of topics which are often updated quarterly. Topics covered include arrests for recorded crime, criminal statistics, race and the criminal justice system, and youth justice statistics.
Accident and emergency admissions https://www.england.nhs.uk/statistics/tag/ae-attendances/	NHS England publishes monthly accident and emergency statistics. Data are shown at provider organisation level, from NHS Trusts, NHS Foundation Trusts and Independent Sector Organisations.
Homelessness statistics https://www.gov.uk/government/statistics/statutory-homelessness-january-to-march-2016-and-homelessness-prevention-and-relief-2015-to-2016-england	Data is available on the decisions taken by local authorities on homelessness applications and households accepted as owed a main homelessness duty by local authorities. Information is also available on homelessness prevention and relief in England.
Census https://www.ons.gov.uk/census/2011census	Census statistics help paint a picture of the nation and how we live. They provide a detailed snapshot of the population and its characteristics, and underpin funding allocation to provide public services. The last Census was undertaken in 2011.

8. Summary

1. Evidence-Based Policing (EBP) is a problem-solving cycle that involves police officers and staff using and creating the best available evidence to inform, or test, policing policies, decisions and practices.
2. By 'best available evidence' we mean evidence based on research which has been carefully conducted and peer reviewed, relevant and appropriate to the question being asked, and transparent about how it has reached its conclusions and its limitations.
3. Quantitative research involves the generation of numerical information usually to identify the scale and trend of problems.
4. Qualitative research involves the generation of non-numerical information usually to answer questions about why a particular problem/issue is happening or why a process is being implemented in a particular way (usually through the systematic collection of practice based expertise).
5. Questions about 'what works' typically use systematic reviews of existing research and impact evaluation research, ideally using a comparison group, to understand the effect of particular practices on specific outcomes.
6. Central to any EBP approach is the analysis of existing or newly collected data to better understand the problem, plan appropriate responses, and measure (through evaluation) the effects of police activity.
7. One framework for this is the 'ATLAS' model: Ask, Test, Learn, Adapt, Share (see Figure 1), though you might also use the National Decision Model, or the SARA approach (developed by Eck and Spelman) common to problem-solving approaches.
8. Evidence-based approaches will use different research methods depending on the research questions posed, or the problem to be solved. A variety of methods are available and it is important to fit the appropriate method to your research question.
9. It's important to consider the roles and responsibilities of partner organisations in helping you address and evaluate your activity (Box 4, Table 6 & 7).
10. Existing data sources (Table 8) and useful links and resources (Section 9) can help support your EBP approaches.

9. Revision questions

To aid in the re-enforcing of the information contained within these student notes, there is a series of questions that can be used to further test subject knowledge.

- Provide a definition of 'EvidenceBased Policing'.
- Outline the main benefits of using EBP.
- What methods would you adopt if you wanted to know why a particular problem might be happening?
- What are the main research methods that could be used when applying an EPB approach to dealing with a policing issue?
- What are the pros and cons of each type of evidence that may be used?
- Detail the main stages for developing an EBP intervention.
- What are the approaches that might be taken to evaluate an EBP intervention?
- What are the main aims of the stages of ATLAS?
- Where might you find national crime statistics?

10. Useful links and resources

Alliance for Useful Evidence

<http://www.alliance4usefulevidence.org/>

The Alliance is a UK-wide network that promotes the use of high quality evidence to inform decisions on strategy, policy and practice. The Alliance publishes research, shares ideas and advice, and holds events and training. If you are interested in the use of evidence in policy making, you can join the network free <http://www.alliance4usefulevidence.org/join/>

Campbell Collaboration

<http://www.campbellcollaboration.org/>

The Campbell Collaboration is an international research network that produces systematic reviews of the effects of social interventions in Crime & Justice, Education, International Development, and Social Welfare. The Crime & Justice coordinating group prepares and disseminates systematic reviews of high-quality research on methods to reduce crime and delinquency and improve the quality of justice.

Center for Evidence Based Crime Policy (US)

<http://cebcp.org/>

The Center for Evidence Based Crime Policy is based at George Mason University in the USA. The CEBCP website hosts a range of free tools including the policing matrix (<http://cebcp.org/evidence-based-policing/the-matrix/>) which categorizes and visualizes evaluated police tactics according to three common dimensions of crime prevention – the nature of the target, the extent to which the strategy is proactive or reactive, and the specificity or generality of the strategy.

Center for Problem-Oriented Policing (US)

<http://www.popcenter.org/>

The Center for Problem-Oriented Policing is a non-profit US organisation working to advance the concept and practice of problem-oriented policing. The Center hosts readily accessible information about ways in which police can more effectively address specific crime and disorder problems.

College of Policing Research

<http://whatworks.college.police.uk/Research/Pages/default.aspx>

The College is the professional body for everyone working in policing. We publish primary research and evidence synthesis, as well as hosting a research glossary page on our website.

Global Policing Database

<http://www.gpd.uq.edu.au/search.php>

The GPD is a web-based, searchable database designed to capture all published and unpublished experimental and quasi-experimental evaluations of policing interventions conducted since 1950. GPD Version 1.0 has now been launched and contains research from 2008 to 2014.

Her Majesty's Inspectorate of Constabulary (HMIC)

<http://www.justiceinspectorates.gov.uk/hmic/>

HMIC inspect forces using the PEEL (Police Effectiveness, Efficiency and Legitimacy) framework, as well as undertaking thematic inspections on a range of issues. The HMIC website also hosts source data for its inspections and reports.

Home Office Research

<https://www.gov.uk/government/organisations/home-office/about/research>

Home Office research and analysis covers the following areas: alcohol, crime, counter terrorism, drugs, crime, migration and policing. You can access the current research series, as well as archived research and analysis from the Home Office Research web site.

National Police Library (NPL)

<http://www.college.police.uk/What-we-do/Research/Library/Pages/default.aspx>

Library membership is free to all serving UK police officers and staff. As a member of the library you can make use of both physical and eResources, giving you instant online access to a huge range of academic journals.

POLKA (Police Online Knowledge Area)

<https://polka.pnn.police.uk/>

POLKA (Police OnLine Knowledge Area) is a secure collaboration tool, hosted on the PNN (Police National Network), a RESTRICTED network holding up to and including GPMS RESTRICTED content. Thousands of police officers and staff use POLKA to discuss ideas, share documents and network across forces. The Knowledge Bank is one of dozens of POLKA communities and allows its over 8,000 members to access, share and collaborate in the development of local policing practice, good quality policing research and information on future issues impacting on crime, policing and/or public safety.

What Works Centre for Crime Reduction (WWCCR)

<http://whatworks.college.police.uk/Pages/default.aspx>

The College of Policing hosts the WWCCR. You can access information about the centre, as well products including the crime reduction toolkit, via the website. Here you can also find details about our work to build research partnerships between forces and academia, and details of research support services available to all forces, officers and staff.

Society of Evidence Based Policing (UK)

<http://www.sebp.police.uk/>

The Society of Evidence Based Policing is made up of police officers, police staff, and research professionals who want to transform policing through understanding what works. Membership is free and gives access to: reduced price conferences, reduced subscription to the journal of experimental criminology, and the ability to network & learn from other practitioners.

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Appendix A – Example research project template

Project name

Researcher: Name and contact details

Participating organisations: Name

Estimated start date: DD MMM YYYY

Estimated end date: DD MMM YYYY (final deliverable)

1. Title page

- Research question.
- Authors.

2. Context

- Where and when the research took place.
- A description of the problem.
- What outcomes are expected.

3. Design

- In one or two sentences, describe what the research aims to achieve, and the type of statements that the research would make possible.
- Explain the method that you will be using (e.g. pre/post, pre/post with comparison).
- Explain what 'population' will be the focus of the research (e.g. victims or location hotspots).
- Explain how the treatment group and the comparison group (if there is one) were selected and how many people/locations were in each group.
- Planned timing of the data collection for the pre and post measures.

4. Intervention

- Details of the intervention and how it was delivered.
- Details of what the comparison group received if anything (whether it is 'business as usual' or another intervention).

5. Outcome measure

- Explain the measure used to assess impact (e.g. number of ASB incidents).
- Explain how the data were collected.
- Report whether any data were missing.

6. Results

- Describe the effect on your outcome and how you analyses this.
- Provide an interpretation of the results.

7. Conclusion

- Summary of how the results fit with the existing evidence base (if there is one).
- Implications and next steps.

8. Peer review

- Describe any existing or proposed arrangements for practitioner or academic peer review.