Analysis – problem solving to tackle knife crime

What causes knife crime, and who commits it?

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Drawing on a wide range of data and intelligence sources through **scanning**, you have now decided on a specific type of knife crime on which to focus your problem-solving efforts. You know how the problem is trending, where and when it is most concentrated, and the harms it generates. The next step is to dig deeper to identify the causes and conditions that enable your problem to persist. This step is analysis.

- **Find out more about analysis**

At this stage of the SARA process, it is important to keep in mind that problem solving does not require you to identify and address all of the causes that give rise to your selected problem. That would be unrealistic. Knife crime, for example, is caused by a very wide range of factors, from background conditions, such as unemployment and poverty (see **How and why knives are used**), to more immediate situational factors, such as the presence of peers and alcohol. All may contribute to your local knife crime problem, but some will be beyond the reach of practical local problem solving.

Instead, effective problem analysis is about analysing a problem to identify so-called pinch points. Pinch points are those causes and conditions that contribute to a problem and are open to preventive intervention by the police and partners.

- **Find out more about pinch points**

The goal of problem analysis is therefore to help you identify an appropriate and effective response that is based on those pinch points and can be delivered within the resources of your organisation.

For example, identifying that those who engage in knife crime are more likely to have had adverse childhood experiences might help explain their offending, but reducing such experiences is largely beyond the ability of policing and, if successful, would take many years for any benefits to be realised.

This section of the guide will help you identify pinch points to inform response selection. It comprises two main parts.

1. The first part describes two tools that are commonly used in problem solving, which can help break down your identified problem and structure your problem analysis. These tools are the problem analysis triangle and crime scripts.
2. The second part of this section outlines a series of questions to ask when analysing your identified knife crime problem. Consulting available data and partners to answer these questions will help you select the most promising set of responses.

How and why knives are used

An obvious reason for carrying and using a knife is to do serious harm to another person. To this end, knives are highly effective. But knives can also give a person power over others. Ironically, the ‘coercive power’ of a knife can mean that violence isn’t always necessary – a person may rely on threat alone to control another person. Research has identified three main reasons why someone might carry a knife: motivation, peer influence and contagion.

Motivation

A person may carry a knife for offensive or defensive reasons, and/or to present themselves in a certain way. Many people report carrying a weapon for self-defence (Brennan, 2017). This may be because they expect to be involved in violence or because they are fearful in their local neighbourhood.

Carrying a knife can also shape how a person is seen by others. For example, carrying the same weapons can cement feelings of closeness within a group. A person might also believe that being known for carrying a knife offers protection from attack.

Peer influence

Friends matter when it comes to weapon carrying, and evidence shows that peers are an important influence on the decision to carry a weapon, particularly among young people (Brennan, 2018). Research has shown that when one member of a friendship group begins to carry a weapon, others are more likely to follow (Dijkstra and others, 2010).

Weapon carrying is also self-reinforcing: carrying a weapon increases a person's belief that their peers carry weapons, and believing that one's peers carry weapons increases the acceptability of weapon carrying (Hemenway D and others, 2011).

Contagion

When a new weapon is introduced into a community, it may have a contagion effect, increasing the attractiveness of that weapon type (Blumstein and Cork, 1996). For example, if one or more people begin to carry large knives, others may 'level up' to match them.

Weapon carrying and use is usually preceded by other less serious forms of violence either as a victim, a perpetrator or both. Self-report surveys show that most young people who reported carrying a weapon had been involved in violence the year before (Brennan IR, 2021); (Spano, Pridemore and Bolland, 2012). However, because it is less serious, it may not feature in police, school or health records.

In addition to exposure to violence, factors associated with weapon carrying include being male, being in late teens, having friends who have been in trouble with the police, low trust in the police and substance misuse (Brennan, 2018).

Individually, these factors probably do not cause weapon carrying but are symptomatic of a lifestyle and environment where violence may be common (Brennan, 2018).

The problem analysis triangle

Problem analysis triangles, as shown in Figure 1, can help structure the analysis of your local knife crime problem.

The inner triangle refers to three conditions that must occur for a knife crime to take place:

- the presence of an equipped offender (someone in possession of a knife)
- who is at the same time in contact with an accessible victim
- in a location where there is no adequate guardianship

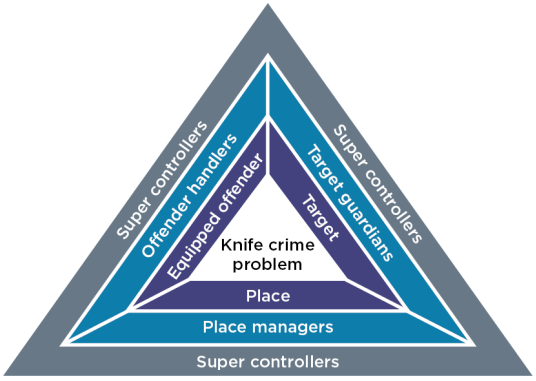
The middle triangle refers to those in a position to prevent knife crime, by:

- 'guarding' those who are potential victims of knife crime
- inhibiting ('handling') the person(s) engaging in knife crime

- overseeing (‘managing’) locations in ways that reduce the opportunities for knife crimes to occur

The outermost triangle relates to so-called ‘super controllers’, who are those able to apply levers to relevant handlers, guardians or place managers, to persuade them to act in ways that will lessen or eliminate a particular knife crime problem (Sampson, Eck and Dunham, 2010).

For example, a nightclub chain may introduce a policy mandating club (place) managers to check for weapons on entry. Or, regulation might be put in place to clamp down on the sale of combat knives, thereby reducing the likelihood that motivated offenders can gain access to certain knife types.



The problem analysis triangle provides you with a framework to begin to break down your identified knife crime problem to work out which elements are most open to intervention. For example, how might:

- the locations where knife crimes are concentrated be made less conducive to violent offending?
- the potential targets of knife crime be better protected to make them less vulnerable?
- those behaving in undesirable ways be handled, diverted, deterred or removed from situations where knife crime is most likely?

The problem analysis triangle also highlights that offences need more than just offenders, which means that it’s possible to reduce knife crime even when influencing offenders is difficult or impractical. For example, just as offenders can be discouraged from carrying knives by personal appeals from their loved ones (the offender ‘handlers’ in the problem analysis triangle), it’s also possible to prevent knife crime by improving the management of places at which knife crimes are

most likely to happen, or to prevent injury by better protecting those most likely to be victims.

It’s often recognised that you can’t arrest your way out of many crime problems – the problem analysis triangle is a tool to help identify alternative ways to prevent crime.

Video Transcript

There are two tools that are commonly used in problem solving, which can help break down your problem and structure your problem analysis.

These tools are the problem analysis triangle and crime scripts.

Problem analysis triangles can help structure the analysis of your crime problem.

Using the example of knife crime, the inner triangle refers to three conditions that must occur for a knife crime to take place:

- the presence of an equipped offender – someone in possession of a knife
- who is at the same time in contact with an accessible victim
- where there is no adequate guardianship in a location

The middle triangle refers to people in a position to prevent knife crime by:

- guarding people who are potential victims
- inhibiting, or handling, the person or people engaging in knife crime
- overseeing, or managing, locations in ways that reduce the opportunities for knife crimes to occur

The outermost triangle relates to super controllers, who are those able to apply levers to guardians, relevant handlers or place managers to persuade them to act in ways that will lessen or eliminate a particular knife crime problem.

For example, a nightclub chain may introduce a policy mandating club managers to check for weapons on entry.

Or regulations might be put in place to clamp down on the sale of combat knives, thereby reducing the likelihood that motivated offenders can gain access to certain knife types.

The problem analysis triangle provides you with a framework to begin to break down your crime problem and work out which elements are most open to intervention.

Crime scripts

All crimes have a beginning, middle and end, with offenders making separate decisions at different stages in the crime commission process. This is clearly true of knife crime – for example, knives have to be acquired, stored, transported, used and potentially discarded.

A crime script refers to the stages needed for an offence to be committed. Scripts can be useful when problem solving to help break down problems into the sequence of actions adopted prior to, during and following an offence. Constructing scripts can help identify a fuller range of preventive pinch points at which you might direct your problem solving responses.

There is no set method for devising a crime script (Borrion, 2013). Police data, investigation files, and interviews with offenders and victims can all help piece together information to create a script that reflects your local circumstances. Other data sources of the sort described in the **Scanning section** might also shed light on the crime commission process.

A crime script for offences involving knives is shown below, which includes both offenders and victims. While this script is deliberately simple, it illustrates what a script looks like and how detailing the steps required for knife crime commission might suggest promising means of intervention. In examining each stage, the key question is whether there is any scope to disrupt the script in ways that will prevent the crime.

Before the crime	• Buy machete online from US-based website • Hear of shop that keeps cash hidden underneath the till • Travel to target shop using an unregistered 'pool' car
During the crime	• Use face covering and hooded top to obscure identity • Threaten shopkeeper with machete • Take money from under till

After the crime	• Dump machete and hooded top in nearby rubbish bin • Leave area in same car

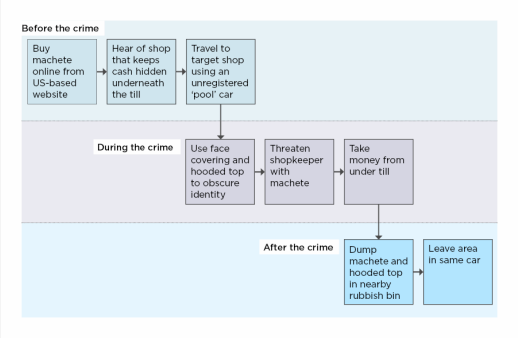


Figure 2 – crime script for a hypothetical knife-point shop robbery.

Preventive possibilities that emerge from the script above might focus on:

- supply chains for machetes
- cash handling by shops
- use of automatic number plate recognition software to track suspicious vehicle movement (and publicity for it)
- shops indicating that they only admit customers whose faces can be seen (with CCTV use in shops)
- installation of protective screens for shop staff
- searching for – and conducting forensic examination of – recovered knives following a reported incident (again with publicity)

Video Transcript

Crime scripts are the second tool commonly used in problem solving, which can help break down your problem and structure your problem analysis.

All crimes have a beginning, middle and end, with offenders making decisions at different stages in the crime commission process.

Using a knife crime example, knives have to be acquired, stored, transported, used and potentially discarded.

Crime scripts can be useful when you're problem solving to help break down problems into the sequence of actions adopted prior to, during and following an offence.

Constructing scripts can help identify a fuller range of preventive pinch points at which you might direct your problem-solving responses.

Police data, investigation files, and interviews with offenders and victims can all help piece together information to create a script that reflects your local circumstances.

Other data sources might also help you to analyse the crime commission process.

Asking the right questions about your local knife crime problem

The **Scanning section** describes data and intelligence sources that might be drawn on when trying to define and quantify your local knife crime problem.

Those datasets also provide an important source of information when trying to work out what is causing your identified problem to persist (Analysis), supported by tools such as the problem analysis triangle and crime scripts.

Good problem analysis requires that you ask the right questions of relevant data, which allow you to better understand what is driving your local knife crime problem and what can be done to try to address it.

Analysis is not just for analysts. While **statistical data of the sort described in the Scanning section** is important for determining what is producing your problem, it is seldom sufficient. Good problem analysis also often involves visiting the locations where your selected problem concentrates, speaking to affected parties, and consulting investigators who have a good idea of what is allowing your selected problem to continue.

Likewise, neighbourhood policing teams, the community and the voluntary sector can all provide valuable context that adds nuance to your analysis.

In the section that follows, we list some questions to ask when analysing your local knife crime problem, organised according to the VOLTAGE analysis framework (Ratcliffe, 2018).

VOLTAGE stand for:

- Victims
- Offenders
- Locations
- Times
- Attractors
- Groups
- Enhancers

Not all of these questions will be relevant to your own local knife crime problem. Likewise, some specific knife crime problems may call for different analysis questions to be answered.

Victims of knife crime

- Does your identified knife crime problem concentrate on certain victims? If so, who are they and why does it concentrate on them?
- Were the victims known to the police before their involvement in knife crime? If so, why?
- Are there repeat knife crime victims for your identified knife crime problem? Why are they repeatedly the victims of knife crime?
- Do repeat knife crime victims differ from one-time knife crime victims? If so, how, and is it relevant to how you might respond?
- Did the victim carry a knife? If so, where did they get the knife from and why were they carrying it?
- What are the circumstances surrounding knife crime victimisation in your local area? Is it related to gangs, drugs, organised crime, the night-time economy, alcohol or some combination thereof?
- Are victims typically attending hospital for knife wound treatment?

Knife crime offenders

- What do you know about the individuals perpetrating your selected knife crime problem (for example, age, residential area, occupation or school, common activities)?
- Are the offenders new to your area or are they residents in another part of the force or country?
- Were offenders known to the police before their involvement in knife crime? If so, why?

- What proportion of offenders have a history of violence (knife-enabled or otherwise)?
- How much of your local knife crime problem can be attributed to a few repeat offenders?
- Where are offenders acquiring the knives used in your identified problem?
- Why are they carrying a knife?
- Do offenders know their victims? If so, what are the relationships between the offender(s) and victim(s)? Does this pairing of victim and offender appear in previous police records?

Analysing knife crime offenders: a case study

In Essex, a problem analysis of non-domestic knife use was developed using the VOLTAGE framework. Analysis found that offenders were overwhelmingly young males between the ages of 15-24 and resident within Essex (as opposed to, for example, visitors from London involved in ‘county lines’ crime).

Repeated use of knives by offenders was unusual, which presented challenges for focusing on repeat knife offending. However, a significant proportion of those who went on to use a knife had been involved in previous violent crimes without the use of weapons.

Analysis of their prior known offending history, intelligence categories and warning markers found that more than half had participated in illicit drugs markets (more frequently as end users rather than dealers, and this is how victims and perpetrators were often known to one another), and they were three times more likely than non-weapon-using offenders to have carried out their crimes with co-offenders.

Different profiles, relationships between actors and characteristics of knife-use offences were identified, with underlying cross-cutting themes of residing in areas of socio-economic disadvantage and misuse of illegal substances. Through this approach, Essex Police sought to develop more focused and targeted interventions directed at individuals considered most likely to commit knife crime.

Examining the links between knife crime victims and offenders

Who are the victims and perpetrators of knife crime? Are they different groups? And how much of the violence can be attributed to conflict and retaliation between gangs and/or organised crime

groups? Laura Bailey and colleagues addressed these questions using four years of knife crime data from Thames Valley Police, comprising over 14,000 individuals and 10,000 crimes (Bailey, Harinam and Ariel, 2020).

They found that victims and offenders had similar demographic characteristics, as well as similar offending and victimisation histories. Three-quarters of offenders and four in ten victims had a prior criminal record, while around one in five offenders and one in ten victims were affiliated with a gang or organised crime group. Around 9% of knife crime victims were knife crime offenders, and around 8% of offenders had a history of knife-related victimisation.

Using a technique called social network analysis, they concluded that the people involved in knife crime are not closely connected but, instead, the network is better described as a collection of one-off violent incidents. While there were examples of violence affiliated with gangs and organised crime groups, acts of retaliatory violence in their dataset were relatively rare

Locations

- Does your identified knife crime problem concentrate at particular locations? If so, what is it about those locations that is conducive to knife crime?
- Do other crimes also occur at these locations? If so, what types of crimes or other police and non-police demand calls?
- Are the knife crime incidents happening near to a place where weapons can be stored and/or discarded such as parks or waste grounds?
- What is the history of violence in the places your knife crime problem is occurring?

Times

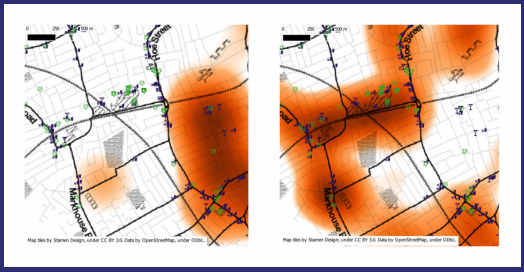
- When does your identified knife crime problem mainly occur (time of day, day of the week, month of the year)? What is it about the identified peak times which might account for a higher frequency of knife crime?
- How does the temporal profile of your identified knife crime problem compare to other forms of knife crime and violence more generally? What might account for any observed variation?

Analysing knife crime locations and times

Analysis of places can reveal important differences in specific hotspots and hot times. To illustrate, consider the two crime maps below. They demonstrate the different spatial patterns observed in the distribution of knife-enabled robbery (left panel) and knife-enabled wounding (right panel) for a small area of London. This is an example of scanning. For knife-enabled robbery (left panel), offences were clustered within a gentrifying area populated by expensive restaurants and bars. The reason that robbery clustered where it did (analysis) was because of the regular throughput of professionals in this area making their way home from the nearby busy transport interchange. These individuals provided readily available targets for equipped offenders seeking items that could be easily exchanged for cash or services, including drugs, in nearby areas outside of the hotspot.

For the knife wounding hotspot (right panel), the spatial clustering is very different. These forms of knife crime were found to cluster around local convenience stores, cash machines and fast-food premises. Public concern and police reports had highlighted problems in this area with the drug trade and youths congregating around these late-opening venues, with potential for market participants to be carrying weapons when exchanging drugs.

These two examples show the importance of focusing on specific types of knife crime when problem solving, as described in the Scanning section. Focusing on the broad category of knife crime conceals important variation and limits our ability to tailor and target responses.



Crime maps for knife-enabled robbery and knife-enabled wounding

Attractors

- Are the places where knife crime is concentrating examples of crime generators – busy places that create opportunities for crime, such as transport hubs – or crime attractors – less busy places that draw in people who are motivated to commit crime, such as a location where illicit drugs are

sold?

Groups

- Are knife crime victims and/or offenders members of a gang?
- Are knife crime victims and/or offenders members of an organised crime group?
- Are knife crime victims and/or offenders associated with a particular school or sports team or other social group?

Enhancers

- What types of knives are typically used in your selected knife crime problem? Do these differ from the knives used in other forms of knife crime? If so, why?
- Where are these knives sourced?
- How frequent is the weapon carrying required to commit the offence(s) – was it constant or regular, or was it just for the purposes of committing the crime?
- Is there an illicit market in knives in your area? Who are the suppliers and how do they market, take and fulfil orders?
- Are there other factors to consider that may be part of the problem, such as the presence and use of alcohol or substance misuse, mental health issues and so on?
- Are there neighbourhood factors that may elevate the risk of knife crime, such as high prevalence of violence, fear or distrust of the police?

Analysing knives: the four ‘A’s of knife selection

It is trite but nonetheless true that knife crimes require knives. One important step in problem analysis is to understand the types of knives that are used in violence in your local area and to draw conclusions about why some weapons are used (or not) and in what types of knife crime. Understanding these patterns can help frame your choice of response. For example, if kitchen knives account for much of the violence in your area, then tackling the availability of knives through knife amnesties or weapons sweeps may not be a productive response. Alternatively, if rare and more specialised knives are being used, then tackling their availability may be effective.

When analysing the types of knives being used in your local area, consider the four ‘A’s.

- Availability – how prevalent are different knife types in the community?

- Attractiveness – what features of a knife make it attractive to users?
- Affordability – how much resource does it take to acquire a particular knife type and what are the associated costs in doing so?
- Accessibility – what restrictions are in place to prevent access to knives and how effective are they?

Availability of knives

Unlike firearms, knives are in most homes, are in many workplaces and can be legally purchased online. Although legislation has banned some knife types and, in doing so, has reduced their availability, domestic kitchen knives and craft knives are ubiquitous. But availability alone cannot explain the observed patterns in the types of knives that are carried or those used in violence. Knife use for criminal purposes is also affected by attractiveness, affordability and accessibility, which if altered may increase or decrease the likelihood that someone might use or carry a particular knife.

Attractiveness of knives

Although knives have high availability, many have features that mean they are not well-suited for use in violence. These features may be practical, such as having too small a blade to cause damage or lacking a guard that protects the user from accidental injury. Features that make a particular type of knife attractive can also be aesthetic: more menacing-looking and less available knives often have higher status or are more effective in threatening people, while more readily available knives and less dangerous knives have lower status. Consequently, it is not inevitable that someone will carry a kitchen knife just because a more attractive weapon is less accessible.

Affordability of knives

Acquiring different types of knives have different costs, and these costs are both financial and (potentially) punitive. At one end of the spectrum, a kitchen knife in a person’s home has high affordability but there are consequences of being found in possession of one outside the home. At the other end of the spectrum is an illegal or rare knife, such as a ‘zombie knife’, that is more expensive and has higher punitive costs. It is therefore important to balance attractiveness and availability with affordability. An implication for problem solving is that an expensive weapon with low affordability, such as a zombie knife, is less likely to be discarded in a park or a knife bin. When their availability and attractiveness is high, an illicit market or loan system for these knives may also emerge.

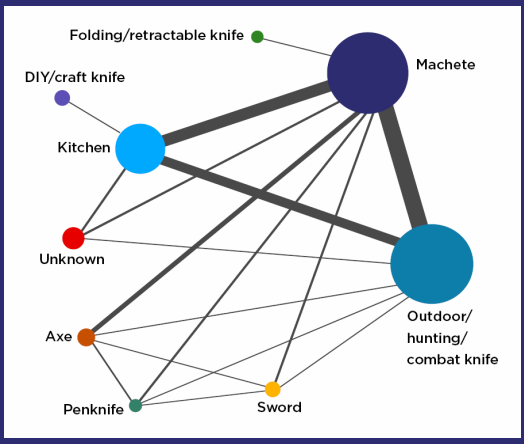
Accessibility of knives

Although a particular knife type may be readily available in shops or from online retailers, there are often restrictions in place to limit how easy it is for a person to access them. In shops, this might be security restrictions to prevent the knife being stolen, policies around age restrictions or keeping knives behind a counter. In online retail, the Offensive Weapons Act 2019 has extended these restrictions to doorstep deliveries. Outside of retail accessibility, situational interventions like knife arches can significantly reduce the accessibility of a knife to certain premises.

In producing this guidance document, we examined the types of knives used in fatal violence in London in 2019/20. Informed by the four A's framework (attractiveness, availability, affordability and accessibility), we found that the attractiveness of certain knives, such as machetes, appears to outweigh the difficulties of sourcing them (availability and accessibility) or the risks of being arrested in possession of them (affordability).

In the image below, the size of each circle shows how often a particular type of knife featured in murder in London in 2019/20. The width of the line connecting the circles represents how frequently two types of weapons were used in the same incident, thereby indicating group violence.

The image tells us that specialist knives are indeed a serious problem in London (at least over the period analysed) and that group violence tends to involve multiple specialist knives. Therefore, tackling the availability of these types of knives in an effort to reduce knife-related violence is a logical response.



Types of knives used in fatal violence in London in 2019/20

Analysis checklist

Before moving on to the response section, check that you have considered the following items.

1. Have you checked the specific locations where knife crimes have been committed?

2. Have you worked out what draws vulnerable victims and likely offenders to the locations where knife crimes are concentrated?

3. Have you worked out why offences tend to occur in specific locations at specific times?

4. Have you checked what led up to knife crimes being committed in the locations where they occur most often?

5. Have you worked out how knives are being obtained and why they are being carried in the local area?

6. Have you checked on how those using knives leave the scene of the crime and dispose of the weapons they used?

7. Have you worked out what aspects of the situation enabling or provoking the commission of knife crimes are most open to preventive intervention, thinking about victims, offenders, locations, times, attractors, groups and enablers? Do you know which pinch points are the most promising for intervention?

If the answer to any of these questions is ‘no’, then you may need to undertake further analysis or scanning before moving on to the next phase of SARA, response.

Go to response

Video Transcript

When working through the SARA model, treat the different elements as fluid and be willing to revisit earlier stages as new information emerges and modifications are required.

You can follow a simple checklist to help you ensure that you've met all requirements before proceeding from analysis to response.

1. Have you checked the specific locations where knife crimes have been committed?
2. Have you worked out what draws vulnerable victims and likely offenders to the locations where knife crimes are concentrated?
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Tags

Knife crime