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## Community safety practice briefing

# To CCTV or not to CCTV?

A review of current research into the effectiveness of CCTV systems in reducing crime

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*The extent of CCTV coverage and the government's funding of new systems has increased dramatically over the last decade. There is very little substantive research evidence, however, to suggest that CCTV works. This briefing has been written to inform community safety practitioners about recent research into the effectiveness of CCTV, which suggests that it is not always as successful at reducing crime as it is claimed to be.*

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## Introduction

The funding opportunities for Crime and Disorder Partnerships (CDRPs) to introduce Closed Circuit Television (CCTV) as a crime prevention measure have increased dramatically over the last decade. So too have the level of coverage and the belief in CCTV as a 'cure-all'.

The extent of CCTV coverage has grown dramatically over the last decade. Although there are very few official figures, the following estimates highlight this growth:<sup>1</sup>

- 1990: Three town centre schemes with approximately 100 cameras.
- 1994: 16 town centre schemes with approximately 400 cameras.
- 1997: 167 schemes with approximately 5,238 cameras.
- Based upon funding provided over the last 5 years, it is estimated that by the end of 2002 there will be approximately 500 systems with 40,000 cameras.

This briefing has been written to inform community safety practitioners of recent research on the effectiveness of CCTV. Contrary to the position suggested by the availability of financial support, the evidence is by no means conclusive. Research suggests that the extent to which CCTV can act as an effective crime prevention measure is very much dependent upon the context in which it is applied.

## The theory behind CCTV

The mechanisms under which CCTV aims to reduce crime are based upon the following (largely simplistic) assumptions:

- 1 **Deterrence.** The potential offender becomes aware of the presence of CCTV, assesses the risks of offending in this location to outweigh the benefits and chooses either not to offend or to offend elsewhere.
- 2 **Efficient deployment.** CCTV cameras allow those monitoring the scene to determine whether police assistance is required. This ensures that police resources are called upon only when necessary.
- 3 **Self discipline.**
  - By potential victims.** They are reminded of the 'risk' of crime, therefore altering their behaviour accordingly.
  - By potential offenders.** Through a process similar to that described by Foucault<sup>2</sup> in his discussion of Bentham's Panopticon, the threat of potential surveillance (whether the cameras are actually being monitored may be irrelevant) acts to produce a self discipline in which individuals police their own behaviour. In the Panopticon, prison cells were arranged around a central watchtower

from which a supervisor **could** constantly survey them. Prisoners could never be sure whether they were being watched, so began to police their own behaviour: 'Bentham laid down the principle that power should be visible and unverifiable. Visible: the inmate will constantly have before his eyes the tall outline of the central tower from which he is spied upon. Unverifiable: the inmate must never know whether he is being looked at at any moment, but he must be sure that he may always be so.'<sup>3</sup>

Similarly, the CCTV camera may produce a self-discipline through fear of surveillance, whether real or imagined.

- 4 **Presence of a capable guardian.** The 'Routine Activity Theory'<sup>4</sup> suggests that for a crime to be committed there must be a motivated offender, a suitable target and the absence of a capable guardian. Any act that prevents the convergence of these elements will reduce the likelihood of a crime taking place. CCTV, as a capable guardian, may help to reduce crime.
- 5 **Detection.** CCTV cameras capture images of offences taking place. In some cases this may lead to punishment and the removal of the offenders' ability to offend (either due to incarceration, or increased monitoring and supervision). The latter mechanism is by far the most publicised, with high-profile cases such as the abduction and murder of James Bulger and the arrest of David Copeland, in which images of the offenders on CCTV aided their detection and subsequent arrest.

## How much does CCTV cost?

### At a national level

Between 1994 and 1997, the Home Office made available £38 million to fund 585 CCTV schemes. Between 1999 and 2003, they have made and will make available a further £170 million for CCTV schemes. Over the period 1996 to 1998 (before the £170 million was allocated) CCTV accounted for more than three-quarters of total spending on crime prevention by the Home Office.<sup>5</sup> Each pound of funding is matched by local authorities.

Despite the boom in camera coverage and government funding, there has been very little substantive 'quality' evidence to support these measures.

### At a local level

The cost of CCTV as a crime prevention measure includes not only the initial investment but also the ongoing maintenance and running costs. For this reason, any cost effectiveness

analysis (as part of a post-installation evaluation or a pre-installation feasibility study) must account for these factors, in particular the staff time required to monitor the cameras.

Westminster City Council have estimated the costs of their CCTV system as follows:<sup>6</sup>

- The capital cost for each camera is about £20,000.
- The annual revenue costs are around £12,000 per camera.

## What effect does CCTV have on different types of crime?

### Property crime

Studies into the effects of CCTV on property crime include:

- An evaluation of CCTV within three town centres revealed that, overall, property crime was reduced within the areas covered by CCTV.<sup>7</sup> In one of the three study areas, however, the evidence was less positive. Thefts from vehicles and criminal damage increased, and the reduction in theft of vehicles and the 'containment' of burglary of shops offences coincided with the introduction of other significant measures (traffic calming and pedestrianisation), making it very difficult to attribute any changes in crime rates to CCTV alone.
- An evaluation of six crime prevention initiatives found that overall car crime had reduced in the car parks in which CCTV had been installed, when compared either to a period prior to the installation or to control areas without CCTV.<sup>8</sup> The effects appeared to be more positive for theft of as opposed to theft from vehicles.
- An evaluation of CCTV within Ilford Town Centre revealed a reduction in criminal damage offences, but other property crimes (eg burglary and shoplifting) showed no such reductions.<sup>9</sup>
- An evaluation of CCTV within Burnley Town Centre found that there were significant decreases in all property crime (burglary, car crime, criminal damage, handling stolen goods and fraud) within the area.<sup>10</sup>
- An evaluation of CCTV within Doncaster city centre found that vehicle crime reduced following the introduction of CCTV but other property offences (eg burglary, other thefts, shoplifting and criminal damage) did not.<sup>11</sup>
- CCTV was found to work effectively in reducing burglary within a sheltered housing scheme.<sup>12</sup>
- A significant decrease in the level of thefts from vehicles was found to result from the use of CCTV, but the effect

upon theft of vehicles and criminal damage to vehicles was much less certain.<sup>13</sup> The same researcher also found that CCTV reduced vandalism on buses.<sup>14</sup>

- An evaluation of CCTV in Airdrie, revealed that property crime (burglary, vehicle crime, shoplifting, fraud and arson) reduced after the introduction of the cameras.<sup>15</sup>

### Personal crime

Research into the effectiveness of CCTV suggests that it is most effective in reducing property crime. This goes some way to supporting the 'rational choice theory',<sup>16</sup> which suggests that offenders seek to maximise the benefits of offending and in doing so make rational choices or decisions based upon the information or cues available to them at the time of offending. CCTV appears to deter the criminal in offences such as vehicle crime or burglary, perhaps on the basis that they perceive the risk of apprehension to outweigh the benefits. In crimes involving alcohol (such as public disorder) where 'rationality' is often lost, the deterrent or 'risk' effect of CCTV is weakened.

Research on the effect of CCTV schemes on crimes against the person includes:

- In larger metropolitan districts, CCTV had less impact upon personal crime. However, the same study found evidence that the cameras reduced assaults within smaller market towns.<sup>17</sup>
- CCTV (as part of a general security package) reduced robberies within London Underground Stations that were smaller and less complex in their layout.<sup>18</sup>
- Significant reductions in violence and drug offences were found in the area covered by CCTV in Burnley.<sup>19</sup>
- The Ilford study revealed a reduction in robbery and theft from the person offences. However, there was no reduction in violence or drug-related offences.<sup>20</sup>
- The introduction of CCTV had no effect on the personal crime offences such as assault.<sup>21</sup>

## Other key findings

### Displacement/diffusion of benefits

'Displacement' argues that introducing a crime prevention measure (in this case CCTV) into a particular area will block opportunities for crime and therefore offenders will automatically select a target elsewhere or change their choice of crime. In other words, crime is moved, not reduced.

In direct contrast to this, some suggest that the introduction of a crime prevention measure can create a 'diffusion of benefits', with the surrounding areas not directly covered by the CCTV also seeing a reduction in crime.

Research studies have found the following evidence of displacement and diffusion:

- One study found evidence of a diffusion of benefits to non-CCTV areas for property offences. For personal crime such as robbery and theft from the person, however, there was evidence of geographical displacement to other areas of the city centre not covered by the CCTV.<sup>22</sup>
- Although the introduction of CCTV produced a diffusion of benefits within areas which 'buffered' that covered by the CCTV scheme evaluated in another study, there was a displacement of crime to outlying areas.<sup>23</sup>
- There was no evidence of displacement and some evidence of a diffusion of benefits in the evaluation of CCTV in Burnley Town Centre.<sup>24</sup>
- An evaluation of two parking facilities found that an adjacent car park, which was not covered by the CCTV system, also showed reductions in crime.<sup>25</sup> The same researcher also found evidence for a diffusion of benefits when studying the effects of video cameras fitted to buses. Although cameras were only fitted to a selection of buses, there was a reduction in vandalism throughout the whole fleet.<sup>26</sup>

### Fear of crime

Various pieces of research<sup>27</sup> revealed that CCTV reduced levels of fear of crime amongst respondents. The methodology utilised to ascertain fear of crime levels, however, should be questioned before conclusions are made.

This point is highlighted by a study<sup>28</sup> showing that when respondents were asked pro-CCTV questions before being asked whether or not they were in favour of CCTV, 91 per cent were in favour. When a different sample were asked anti-CCTV questions followed by whether or not they were in favour of CCTV, only 56 per cent were in favour. These figures compare to 71 per cent of respondents being in favour when they were not asked any precursor questions.

### Life cycle

It has been suggested<sup>29</sup> that crime prevention initiatives follow a finite 'life cycle' and for this reason they must be closely monitored to ensure that successes are maintained. The length of time for which a particular initiative can reduce crime without the crime reduction effects 'bottoming

out' has clear implications for those managing such initiatives. Several CCTV evaluations have revealed that the initial reductions in crime and disorder following the installation of CCTV can fade if publicity is not maintained:

- The effectiveness of CCTV within London Underground stations was reduced after approximately 12 months.<sup>30</sup>
- The effect of CCTV on offences such as vehicle crime and criminal damage began to fade after approximately eight months.<sup>31</sup>
- The crime prevention benefits of CCTV began to fade unless publicity relating to successes was maintained.<sup>32</sup>
- The CCTV initiative within Burnley Town Centre had a definite life cycle, after which the positive results began to fade.<sup>33</sup>

### Time delay

There is evidence<sup>34</sup> that some offence categories showed the most significant reductions after the cameras had been installed but before they actually became operational, suggesting a deterrence, as opposed to detection, effect.

In Burnley, crime began to reduce approximately one month before the cameras were installed, suggesting that publicity may have played a part in the crime reduction effects.<sup>35</sup>

### Offenders' perception

Most studies<sup>36</sup> find that offenders are not generally deterred by CCTV (although one<sup>37</sup> found that they are).

### Discriminatory monitoring

Those monitoring CCTV have been found to adopt police categories of suspicion when viewing the screens.<sup>38</sup> The target selection of CCTV operators can be massively discriminatory towards males, particularly Black males:

'For literally thousands of black and working class youths, however law abiding, it transmits a wholly negative message about their position in society.'<sup>39</sup>

When certain sections of the community are disproportionately monitored, this not only acts to portray an impression of criminality amongst these groups (certain acts are noticed whilst other groups may be carrying out the same acts unmonitored and unnoticed), it also conveys a message to these individuals that they are not trusted.

The Stephen Lawrence Inquiry Report places a particular emphasis upon the use of training to deliver 'racism

awareness' and 'valuing cultural diversity' (Recommendations 48-54). Improved training for those responsible for monitoring CCTV systems may go some way towards addressing such imbalances.

## **CCTV does work, doesn't work, sometimes works: what to make of these findings**

Although many evaluations of CCTV have taken place over the last decade, very few have been methodologically valid for a variety of reasons. These include:

- inadequate pre and post CCTV time periods in which data are collected
- no account taken of seasonal variations
- no control areas for comparison
- little discussion of displacement or diffusion of benefits
- presentation of percentages without 'n' values (ie the size of the sample was not specified)
- lack of independent evaluation

In an attempt to ascertain a clearer picture of the crime reduction effects of CCTV, the Home Office have commissioned a review of all CCTV evaluations considered to be methodologically sound.<sup>40</sup> Due to the poor quality of many evaluations, only 24 could be used in this review.

The review looked at six evaluations of CCTV in car parks, four on public transport and 14 in city centre/public housing settings. Each evaluation was rated for effectiveness. This included:

- positive effect (there was a significant decrease in crime rates)
- negative effect (there was a significant increase in crime rates)
- null effect (there was no change in crime rates)
- uncertain effect (the evidence of an effect was unclear)

The results of 12 city centre and two public housing evaluations revealed that:

- Six evaluations had a positive effect.
- Two evaluations had a negative effect.
- Six had a null or uncertain effect.
- The study concluded that CCTV had a very small but statistically significant reduction in crime of three per cent.

The results of four public transport evaluations revealed that:

- Two had a positive effect.
- One had no effect.
- One had a negative effect.
- Overall, there was no statistically significant effect in reducing crime.

The results of six car park evaluations revealed that:

- Five had a positive effect.
- One had a negative effect.
- Overall, there was a significant and positive effect of CCTV. Crime was reduced by 45 per cent in CCTV car park compared to control areas.

The review suggests that CCTV appears to have no effect on violent crimes, a significant effect on vehicle crimes and it is most effective when used in car parks.

## **Addressing the confusion**

The lack of 'quality' evaluation material is presently being addressed. The Home Office, in conjunction with Department for Transport, Local Government and the Regions (DTLR) have jointly funded the first in-depth, national (as opposed to local) evaluation of CCTV. The research is being undertaken independently (The Scarman Centre, Leicester University) and will focus upon 17 schemes from the Round 2 CCTV bids for Crime Reduction Programme funding.

The key areas to be addressed within the evaluation are to:

- Assess the impact of CCTV on crime, disorder and the fear of crime in residential areas, town centres and car parks.
- Look in more detail at the cost-effectiveness of CCTV.
- Assess the effectiveness of novel uses of targeted CCTV initiatives on victims and offenders.
- Ascertain to what extent crime is displaced to areas without CCTV.
- Assess whether CCTV has a beneficial impact on crime and safety in neighbouring areas not covered by the cameras.
- Assess whether CCTV has an impact on the detection, arrest and conviction of offenders.
- Look in more detail at the features that make a particular scheme a success or a failure.

## Data Protection Act 1998 and Human Rights Act 1998

Under the Data Protection Act 1998, CCTV systems that process data must be notified to the Information Commissioner (formerly the Data Protection Commissioner). Systems installed from 1 March 2000 must be automatically registered; those installed before 24 October 1998 should have been registered by 2001. When registering a system, the user must state what the purpose of the system is. Once registered compliance with a number of legally enforceable principles is required. The Data Protection Act requires that information be obtained fairly and lawfully, this includes codes of practice such as:

- Appropriately sized signs (A4 or A3) must be displayed where CCTV is in place.
- Signs should display a 'purpose of the system message'.
- The data/images captured should be used for the original purpose intended for the scheme.
- Cameras should be positioned to ensure that they avoid capturing images that are irrelevant or intrusive.
- Individuals have a right to a copy of any personal data held about them.<sup>41</sup>

Public authorities such as the police, local authorities, prisons, government departments and courts are also bound by Article 8 of the Human Rights Act 1998 which came into force in October 2000. Article 8 states that:

- Everyone has the right to respect for his private and family life, his home and his correspondence.
- There shall be no interference by a public authority with the exercise of this right except such as in accordance with the law and is necessary in a democratic society in the interests of national security, public safety or the economic well being of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights or freedoms of others.

In order to comply with Article 8, public authorities should consider the following principles:<sup>42</sup>

- **Proportionality.** Does the level of threat or risk to community safety warrant the existence of a CCTV scheme? Is the level of coverage commensurate to the level of crime and disorder? Is there a balance between public safety and the rights of the individual?
- **Legality.** CCTV operators must be fully aware and signed up to the system Codes of Practice and Procedures. All actions must be supported by legislation or stated cases, this legislation may include: Section 17 of the Crime and

Disorder Act 1998, Section 6 of the Police Act 1967, Section 163 of the Criminal Justice and Public Order Act 1994, and Section 3 of the Criminal Law Act 1967.

- **Accountability.** CCTV users must ensure that their monitoring practices are governed by the Codes of Practice and Procedures.
- **Necessity/compulsion.** Is the surveillance necessary at all? Are there other crime reduction measures which would achieve the same ends?
- **Subsidiarity.** The operation of the CCTV system should cause minimum interference with the privacy of the individual.

Although complying with such regulations avoids litigation, these guidelines are also designed to ensure that CCTV systems can be used to their maximum effect. As is highlighted in the advertising campaign from the Metropolitan Police's Anti-Terrorist Branch, unless cameras are set up and maintained correctly they are very little use.

## Conclusions

The extent of CCTV coverage and the government's funding of new systems has increased dramatically over the last decade with very little substantive research evidence to suggest that CCTV works. Suggested reasons for this funding may be:

- apparent plausibility ('it must work')
- apparent public support
- the political need to be seen to be doing something about crime
- high-profile cases (eg James Bulger)

But has this attitude and the vast amount of funding been at the expense of other crime reduction measures? Three-quarters of the Home Office Crime Prevention budget was spent on CCTV between 1996 and 1998,<sup>43</sup> yet a comprehensive review has revealed the overall reduction in crime was only five per cent.<sup>44</sup> A parallel systematic review carried out by the Home Office that looked at street lighting, however, found a highly significant reduction in crime of 20 per cent.<sup>45</sup>

Although many evaluations have been methodologically weak, there has been research carried out in this field which has revealed useful information:

- CCTV as a crime prevention measure appears to have a life cycle. Unless publicity is maintained, any initial reductions in crime can fade.

- Evidence reveals that in many cases the effects of CCTV upon crime within an area begin before the cameras actually become operational, suggesting that deterrence may have a greater role to play than detection.
- CCTV has least effect upon public disorder offences and most effect when used in car parks.
- CCTV can be most beneficial when used in conjunction with other crime reduction measures and when tailored to the local setting.
- CCTV monitoring has been shown to be discriminatory.
- The lack of quality evaluation material is currently being addressed by a national research project funded by the Home Office and the DTLR. This will address gaps in current research, including the effectiveness of mobile CCTV and the effects of staffing levels on the effectiveness of CCTV.
- Research<sup>46</sup> suggests that the majority of the public questioned are not concerned about installation of CCTV cameras. It is suggested that, as CCTV and other forms of surveillance become more widespread, these perceptions may change. For example, there have been an increasing number of cases of vandalism against speed cameras in recent years. Although this is not CCTV, will the public's view be 'a camera is a camera is a camera'?

CCTV is not a panacea. As with all crime reduction measures, it should never be assumed that it will reduce crime regardless of considerations for the mechanisms under which it is expected to work or the local environment:

'No one should ever believe that any individual crime prevention measure will always reduce crime. The potential effectiveness of measures depends on their suitability to the circumstances in which a given crime problem manifests itself ... Solution-led situational crime prevention, where particular situational measures are treated as potential cure-alls are, thus, doomed to disappoint.'<sup>47</sup>

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- 40 Welsh and Farrington (forthcoming)
- 41 For more information, including a Checklist of Operating Procedures, see the Home Office Crime Reduction Website ([www.crimereduction.gov.uk/cctv9.htm](http://www.crimereduction.gov.uk/cctv9.htm) and [www.crimereduction.gov.uk/cctv24b.pdf](http://www.crimereduction.gov.uk/cctv24b.pdf)).
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CCTV (Closed Circuit Television) is more compound when you are trying to referred to it, CCTV has a lot of branches under it which includes CCTV camera, CCTV DVR, CCTV NVR , etc. Surveillance is just a branch or a function under CCTV, surveillance can not do without CCTV. At the end of the day, you will realize that CCTV and surveillance can't stay-off each other. 2.5K views . Closed-circuit television (CCTV) systems use cameras to conduct video surveillance of residential, commercial, federal, and municipal properties, and boast a wide range of advanced security features, including analytics, night vision, motion detection, and more. Since its inception 50 years ago, closed-circuit television (CCTV) has evolved from resource-consuming, 24/7 manual monitoring to state-of-the-art Internet Protocol (IP) network cameras capturing and transmitting real-time audio and video to users' private monitors and smartphones. Newer models feature sharp, high-resolution video; crisp, crystal-clear audio; motion detection; video analytics; night vision; and remote access. There are many domestic CCTV systems on the market to help you protect your home. If you're thinking of using one, you need to make sure you do so in a way that respects other people's privacy. If you set up your system so it captures only images within the boundary of your private domestic property (including your garden), then the data protection laws will not apply to you. But what if your system captures images of people outside the boundary of your private domestic property – for example, in neighbours' homes or gardens, shared spaces, or on a public footpath or a street? Regardless of whether or not your use of CCTV falls within the data protection laws, the ICO recommends you use it responsibly to protect the privacy of others. What does "private domestic property" mean? CCTV stands for Closed-Circuit Television. It's a video surveillance system used for security purposes. The first CCTV system with analog cameras was used in 1942 in Germany to monitor rocket launch and later evolved to a more sophisticated system that uses digital surveillance cameras with video analytics capabilities. There are many modern CCTV cameras that can be used for different applications, even for home security. In that case, you will have your Closed Circuit Television, which can record footage from the cameras. At first, security systems could not be monitored remotely; operators were required to look at the screens for something suspicious and react according to some security protocol. Security systems help on crime prevention.