A review of the international evidence of the effectiveness of the use of CCTV in care home settings

A Rapid Evidence Assessment

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QUEEN'S UNIVERSITY BELFAST

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Full Report

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Summary of the report

Overview

The report begins with the rationale for this review which is in response to concerns regarding the quality of care and the potential for abuse in care home settings. It then considers the range of technology used to monitor people within such settings, with particular reference to Closed Circuit Television (CCTV) based technology. The next section focuses on the complex ethical debates relevant to the use of monitoring technology in care home settings and the policies and guidance developed for the use of such technology in Northern Ireland and internationally.

The report then focuses on the rapid evidence assessment of the research on the effectiveness of the use of CCTV in care home settings for service users, carers/families and service provides. The methodology used to conduct the evidence assessment is presented followed by the key findings, including a table summarising all the included studies. The final section of the report considers the possible implications of the current debates and evidence for law, policy, service provision and practice in Northern Ireland.

Context of the report

The background for this report is largely due to the concerns raised about the quality of care and the potential for abuse in care home settings. These include at Winterbourne View Hospital in England, and more locally, Dunmurry Manor Care Home and Muckamore Abbey Hospital in Northern Ireland. In all three cases CCTV played an important role in recording potentially abusive behaviour by staff.

An important initial clarification is that concerns were not initiated by CCTV in these cases but it was used to explore concerns that had been identified by staff or family members. In the case of Muckamore, the CCTV recordings did then lead to the identification of other concerns.

It's also important to highlight from the start that there is a general acceptance of the importance of promoting the quality of care, and of preventing the abuse of people, in care home settings. This report focuses on the more complex question of how that can be best achieved for all people across all care home settings. In addressing this, the evidence of the effectiveness of CCTV is central and the main focus of the report but there are a range of overlapping issues which are also important to address including the range of technology, the ethical debates and the existing law, policy and guidance.

How is technology used to monitor people in care home settings?

CCTV is one of a wide range of technology used to monitor people in care home settings. Indeed, its uses are varied and ranging. The Care Quality Commission (2018) has summarised the main categories of technology currently being used:

- Telecare – including personal alarms that people wear or put in their home, sensors that can track activity and identify risks, memory aids
- Telemonitoring – wearable implants or placed in the home to monitor health such as blood sugar, blood pressure, temperature, heart rate, breathing
- Telemedicine or telehealth – phone or video contact between people and health and social care professionals and between professionals
- Digital records – including: care plans, staff information
- mHealth (or mobile health) – including: apps, online patient communities, wearable technology to promote health
- Automated triage technology – apps and devices that use algorithms
- Overt and covert surveillance systems in communal/private settings

What are the ethical debates relevant to the use of monitoring technology in care home settings?

The ethical debates relevant to the use of CCTV are also important to consider. A useful frame for these debates has been proposed by John Chesterman (2017) Deputy Public Advocate for Victoria in Australia. Adapted for the Northern Ireland context it asks how one would respond if the Department of Health proposed installing CCTV in your living room, kitchen, bathroom and bedroom with the aim of promoting your health and protecting you from harm. Chesterman surmises the instinctive response is likely to be negative. Interestingly however, the initial

instinctive response to the proposal that CCTV be used to try to prevent abuse of people in care home settings can be mixed or even positive. Some of the key ethical debates are then explored. These include:

- Rights based issues – the balancing of protection and privacy
- The benefits vs harm debate – the potential intended and unintended effects of increased uses of technology
- Perspectives of service users who live in care home settings, their family and friends, and staff who work in care home settings
- Legal debates including issues of capacity and consent
- Practical and economic perspectives – what are the possible and best use of limited resources

What policies and guidance have been developed for the use of monitoring technology in care home settings?

There are already many existing policies and guidance relevant to the use of CCTV in care home settings and so important excerpts from these key documents are provided within. The general themes contained within existing policies and guidance include: (1) that CCTV should be for a specific purpose (to promote care/prevent abuse); (2) it is based on a comprehensive assessment; (3) there needs to be consultation with all involved; (4) issues of consent and capacity need to be addressed; (5) the relevant legal requirements need to be considered; (6) the associated need for training should be identified and; (7) the wider practical and operational issues also need to be considered.

Most current guidance mandates a process of carefully considering all the relevant issues before installing CCTV within care settings. However, the National

> *"The National Disability Authority advises against the introduction of CCTV as practice in residential disability centres for the purpose of detecting or deterring abusive behaviour…The introduction of CCTV technology cannot be a substitute for tackling issues around culture, practice, and fundamental respect for the human rights of service users that should underpin disability services. People with disabilities say that what makes them feel safe is being treated with dignity and respect by staff, feeling included, being supported to be independent and to advocate for themselves. Even with CCTV, abuse can take place off-camera or in private zones like bedrooms if there is a negative culture and a lack of respect. The introduction of CCTV would also raise serious issues around privacy, consent, and security and retention of recorded material. In practical terms, the volume of recorded material would make it very difficult and expensive to review even a sample." (p.1)*

Disability Authority (NDA) (2015) in Ireland have issued more specific *NDA advice on CCTV in residential* settings. It states that:

The Regulation and Quality Improvement Authority (2016)'s *Guidance on the use of Overt Closed Circuit Televisions (CCTV) for the Purpose of Surveillance in Regulated Establishments and Agencies* already provides comprehensive guidance on the relevant considerations. It includes: key principles; how the need for CCTV should be assessed; that data protection requirements for any footage; that covert and hidden cameras are beyond the scope of RQIA's guidance; the importance of staff awareness; the need for policies and procedures; the need for appropriate record keeping; the importance of suitable equipment; and the

consent and capacity issues involved. It also details the relevant wider legislative, regulatory and guidance context of the use of CCTV. The RQIA Guidance also specifies that CCTV should not be used in areas and rooms where service users normally receive personal care or where they could reasonably expect relative privacy.

Methodology for the rapid evidence assessment

The rapid evidence assessment for this report focused on the evidence for the effectiveness of the use of CCTV in care home settings. The methodology for a rapid evidence assessment involves a number of key stages which include: Searching the relevant databases and other sources; screening the results to determine if they should be included in the review; assessing the quality of the relevant research; extracting the detailed data from the included studies; synthesising these data into the most relevant aspects of the evidence; and putting all the results together in a summary table.

What is the international evidence of the effectiveness of the use of CCTV in care home settings for service users, carers/families and service providers?

A total of 25 research studies were included in the effectiveness review. There were very few studies that actually tested the effectiveness of CCTV within care homes settings, however we included research that had general relevance to the ethical and practical use of monitoring technologies. This included so called 'Smart Home' technologies that can assist people to 'age in place' have types of monitoring often applied in residential care settings. As such, research evaluating alternative assisted technology that can reduce the need for CCTV was included and studies that have investigated attitudes towards surveillance within healthcare settings. One study considered the effectiveness of CCTV as a tool

for solving crime, and another one study examined technology to monitor staff performance; both have relevance for the debate.

The majority of studies were qualitative in design (15), seven were quantitative and one study consisted of an economic cost-effectiveness analysis of two randomised control trials (RCTs) of healthcare monitoring. We also included a mixed-methods trial of a home monitoring system and a systematic review of camera surveillance in residential disability settings. Ten studies were based on UK research, others were conducted in Australia (2 studies), the Netherlands (5), Sweden (2), the USA and Canada (5 studies; 6 reports). Most of the research is fairly recent, and although our search strategy was confined to a period of last ten years, half of them had been published within the last five (2015-2019).

The quality of the studies was reasonably low; of the 23 empirical studies, only two employed an RCT methodology to assess 'smart home' technology and CCTV versus physical restraint in dementia patients. A PhD thesis from 2018 used a double RCT design to examine the cost-effectiveness of tele-monitoring and tele-healthcare in an English patient sample.

The studies almost exclusively looked at care of older people and people with dementia (n=23). One study concerned residential care of people with learning disabilities and another used CCTV technology to monitor residential inpatient treatment of adolescents. As one of the authors concludes, there is virtually no academic research on the efficacy or residual effects of cameras in care homes (Berridge, 2019).

Hayward's (2017) systematic review identified 43 papers and failed to establish any clear evidence of camera surveillance being effective in protecting the welfare of people with disabilities in residential care. He concluded that it was disliked by people with disabilities and was regarded with suspicion by staff. Functionality was limited and the ethical challenges associated with its deployment are considerable. It is expensive and difficult to trial and there is no evidence that camera surveillance increases functional performance, increases independence or improves quality of life. As with Welsh and Farrington's 2009 review of public area CCTV and crime prevention, the expectations of the use of CCTV often exceeded performance.

Key themes in the available evidence

The key themes include: the tension between the needs of residents, their family members and those providing care; issues relevant to relationship-based care, cultural change and the institutionalisation of care settings; the potential for CCTV to improve care; the possible impact of creating a culture of mistrust, the negative impact on staff; data security relevant to the recorded information; issues of accountability; CCTV's uses in identifying and monitoring health behaviours; CCTV's uses as a crime solving tool; issues of consent, capacity and best interests; the importance of consulting with all stakeholders; and, in the context of limited resources, cost effectiveness.

What are the possible implications of the current debates and evidence for law, policy, service provision and practice in Northern Ireland?

Based on the rapid evidence assessment there is insufficient research evidence to support the proposal to use CCTV in care home settings. There are a range of complex debates involved which do also need to be considered and addressed

but the available research evidence does not support its use. The report also highlights that the relevant legal issues (especially regarding covert surveillance) are also complex. If CCTV is proposed, as the current policies and guidance highlight, consultation, consent and best interests are central considerations. The practical and operational issues are also important.

Introduction

The use of CCTV in care home settings is a complex subject which raises a range of ethical, legal and effectiveness questions. This report aims to provide: an overview of the main issues; a rapid review of the international evidence of the effectiveness of CCTV in care home settings; and a discussion of the implications of the current debates and evidence for law, policy, service provision and practice in Northern Ireland.

The context of this report includes ongoing concerns about the quality of care, and also the potential for abuse, in care home settings, in parallel with technological advances which make increased monitoring and surveillance possible. The potential for surveillance, in this case covert, to record and expose abuse was dramatically demonstrated by the BBC's 2011 Panorama programme about Winterbourne View Hospital. In Northern Ireland, concerns about the care provided at Dunmurry Manor Care Home and Muckamore Abbey Hospital have also lead to calls for the increased use of monitoring and surveillance technology in care home settings to be considered. In all three cases CCTV played an important role in recording behaviour by staff which raised concern. An important initial clarification is that concerns were not initiated by CCTV in these cases but were used to explore concerns that had been identified by staff or family members. In the case of Muckamore, the CCTV recordings did then lead to the identification of other concerns.

The Commissioner for Older People's (COPNI) (2018) report on Dunmurry Manor recognised that the issues involved in the use of CCTV are complex and recommended that "The Department [of Health] or RQIA should produce comprehensive guidance on the potential use of covert and overt CCTV in care

homes compliant with human rights and data protection law." (p. 153) There has also been a campaign, led by a relative of one of the residents of Dunmurry Manor, calling for the introduction of CCTV in all communal areas in care homes and, in May 2019, Belfast City Council also asked the Department of Health to consider including CCTV in contracts with providers of care homes (in that case for older people).

The importance of promoting the quality of care, and of preventing the abuse of people, in care home settings is generally accepted. How that can be best achieved for all people across all care home settings is a much more complex debate. The argument for the use of CCTV in care home settings is based primarily on the premise that the use of CCTV would be effective in improving the quality of care provided and/or it would be effective in recording and/or reducing abuse experienced by people, working and living, in those settings. The question of effectiveness is a central one, and is the main focus of this report, but there are a range of other overlapping issues which are also important to consider. These include: the different ways technology may be used to improve care; alternative approaches to improving care and preventing abuse; the potentially negative unintended consequences of the use of CCTV; the limitations of CCTV; and the rights/legal/policy issues involved. Each of the following sections of the report therefore seeks to inform the debate by exploring a specific research question.

Research questions

- How is technology used to monitor people in care home settings?
- What are the ethical debates relevant to the use of monitoring technology in care home settings?
- What policies and guidance have been developed for the use of monitoring technology in care home settings?
- What is the international evidence of the effectiveness of the use of CCTV in care home settings for service users, carers/families and service providers?
- What are the possible implications of the current debates and evidence for law, policy, service provision and practice in Northern Ireland?

The general use of technology to monitor people in care home settings

In order to provide the wider context for considering the use of CCTV this section outlines the range of uses of technology in care home settings. Considering the different ways technology can be used it is important to avoid the potential false dichotomy: to use technology or not. In practice, there is a wide range of possible uses and arguments will vary depending on a range of variables.

Hanratty et al. (2019) in their mapping of the use of technology to enhance health in care homes reported that “The list of potential applications of technology in this setting is long, and includes remote monitoring, communication between care homes and external agencies and families, medicines optimisation, assistive technologies and the promotion of physical and social activity. Recent developments have focused in particular on the introduction of platforms that link electronic health and care data records, tools for remote consultation and diagnosis, sensor-based technologies that monitor movement and physical activity and social robots that act as companions or serve to support [Activities of Daily Living].” (p.11)

The Care Quality Commission (2018) provides a useful outline of the range of technology used in care.


Telecare – including personal alarms that people wear or put in their home; sensors that can track activity and identify risks; memory aids
Telemonitoring – wearable, implants or in the home to monitor health such as: blood sugar, blood pressure, temperature, heart rate, breathing
Telemedicine or telehealth - phone or video contact between people and health and social care professionals and between professionals
Digital records - including: care plans, staff information
mHealth (or mobile health) including: apps, online patient communities, wearable technology to promote health
Overt and covert surveillance systems in communal/private settings
Automated triage technology – apps and devices that use algorithms

Telecare

Telecare includes personal alarms that people wear or put in their home. They call for urgent help when activated. Sensors can track activity and identify risks where a person lives. They call for help if the person falls or there is a lack of movement for some time. They can also identify when a person is moving around less than usual, or if their habits change. For example, they might be using the bathroom more or sleeping less at night. Sensors can also pick up risks like fire, gas leaks, floods or significant temperature changes. Memory aids help people remember when or how to do something, like take medicine, eat a meal or have a drink. These include talking alarm clocks or watches, which can help people with dementia.

Telemonitoring

Telemonitoring includes equipment people wear including implants under the skin, or put in their home to monitor their health. Examples include monitors for:

- blood sugar
- blood pressure
- temperature
- blood pressure
- temperature

Telemedicine

Telehealth or Telemedicine is phone or video contact between people and health and social care professionals. It enables people to have contact with the professional in real time when the option of a face to face meeting is not available or it isn't needed to agree the best treatment. For example, it could be used to connect a number of professionals involved in someone's care. Or in smaller hospitals to link with centres of excellence.

Digital records

Records can be written, stored and shared digitally rather than on paper. This includes:

- care plans
- medical/clinical records
- medication systems (eMar)
- staff employment records, including recruitment and training records

mHealth

mHealth (or mobile health) includes:

- apps for smartphones or tablets
- online patient communities offering information and support

wearable technology to help people stay fit and healthy, to communicate with friends and family and to carry out everyday tasks. This does not need to be prescribed as part of medical treatment eg. fitness tracker.

Automated triage technology

More clinical triage apps and devices that use algorithms are being introduced. They are already used in primary medical services, both in the NHS and the independent sector to help with assessment and treatment. They are also being piloted in adult social care.

Hall et al. (2019, p.146) provide another way of categorising technology, in this case for people with dementia: “Technologies for dementia support, often labelled ‘assistive technologies’, may be grouped into three overlapping categories: devices used ‘by’ people with dementia, e.g. for prompts and reminders; devices used ‘with’ people with dementia, e.g. to support communication and reminiscence; and devices used ‘on’ people with dementia, e.g. to monitor activity, movement and location.”

Closed-circuit television (CCTV) systems are therefore just one form of technology that can be used with the aim of improving care. It’s also possible to use CCTV in a variety of ways:

- it can be deployed in public, communal and/or private settings;
- it can be on all the time or just when concerns arise;
- it can be monitored some or all of the time or only accessed if a concern is raised;
- it can be used overtly or covertly; and
- there may be variation in the performance of different CCTV systems.

The use of CCTV does seem to provoke more controversy than other uses of technology and it is important to try to clarify why this may be the case. It could be that other technologies may be:

- more directly health focused;
- less associated with uses in criminal justice;
- considered less intrusive;
- viewed as allowing the user more control;
- and/or simply less well known.

It is also important to acknowledge that the use of technology is not the only issue, there is also debate about other forms of monitoring and surveillance by staff. This tends to involve both issues about people not being sufficiently monitored by staff and also monitoring by staff that can be intrusive and restrictive.

In the next section some of these ethical debates relevant to the use of CCTV in care home settings are explored in more depth.

Ethical debates relevant to the use of monitoring technology in care home settings

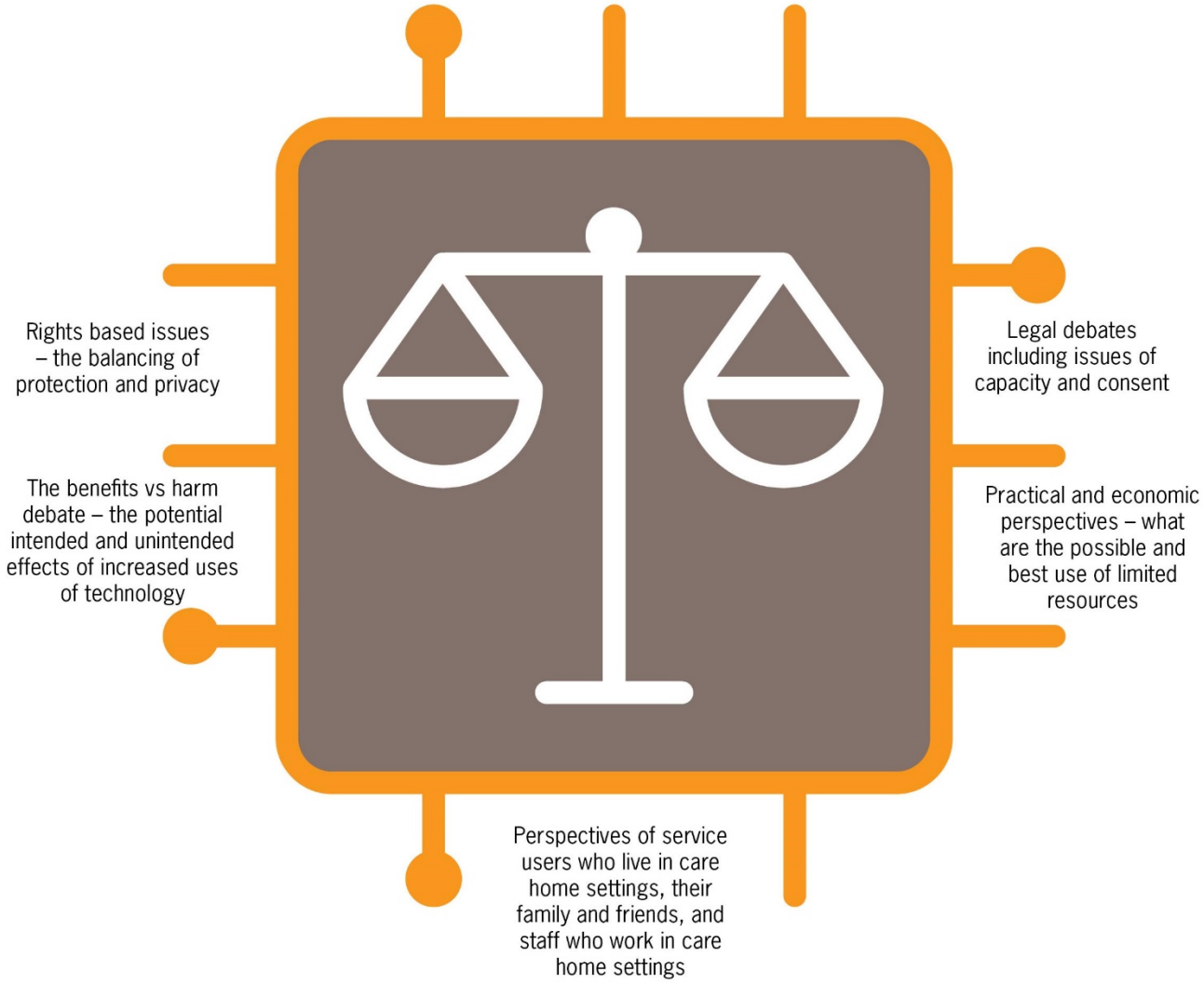
An interesting way of opening the complexity of the issues involved in this subject was proposed by John Chesterman (2017) who is the Deputy Public Advocate for Victoria in Australia. He asks people to consider how they would respond if it was suggested that their private lives should be monitored more closely. “The right to privacy is so fundamental that its value can be difficult to articulate. An argument by analogy can be made here. Imagine asking members of the general public to mount an argument as to why closed-circuit television cameras ought not to be placed in their lounge rooms.” (Chesterman, 2017, p.139). To translate this to the Northern Ireland context, imagine if the Department of Health were to propose installing CCTV in your living room and kitchen, with the aim of promoting your health and preventing you from harm, and perhaps also proposes to install cameras in your bathroom and bedroom for your benefit. The instinctive response tends to be largely negative, on the other hand, the initial, instinctive response to the proposal that CCTV may be used to try to prevent harm to people in care home settings tends to be more mixed or even positive. Chesterman (2017, p. 139) also highlights that “before adopting any significant practice change such as the introduction of in-home surveillance measures, it is important to be quite clear about three things: the specific problem that is being addressed; the likelihood that the measure will succeed; and any unintended consequences that may result.” He goes on to identify some of the key ethical and pragmatic questions that need to be explored. These include “would a consent process need to be undertaken? If so, who could and should be asked to consent if the residents

themselves are unable to do so? In what settings would footage be captured? Who would review footage? How would information be shared? What safeguards would prevent it being shared inappropriately? Might the use of surveillance technologies lead to lower rates of staff employment?" (p. 140)

In this section, the aim is to outline different perspectives on some of these complex debates. These debates should be informed by the evidence on effectiveness but, in this section, the focus is on these more abstract, ethical considerations which can be organised into five broad themes:

- Rights based issues – the balancing of protection and privacy
- The benefits vs harm debate – the potential intended and unintended effects of the use of CCTV
- Perspectives of service users who live in care home settings, their family and friends, and staff who work in care home settings
- Legal debates including issues of capacity and consent
- Practical and economic perspectives – what are the possible and best use of scare resources

Rights based issues – the balancing of protection and privacy



There is little debate that CCTV in a care home setting, even if restricted to communal areas, has an impact on the level of privacy available to those in that setting which includes residents, staff and visitors. Article 8 of the European Convention on Human Rights, which is part of UK domestic law through the Human Rights Act 1998, is the right to respect for private and family life:

"1. Everyone has the right to respect for his private and family life, his home and his correspondence.

2. There shall be no interference by a public authority with the exercise of this right except such as is 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 and freedoms of others."

Interference in the right to privacy can therefore be justified but only if it is necessary and proportionate, for example to protect the person's other rights such as the Article 3 Prohibition of torture,

"No one shall be subjected to torture or to inhuman or degrading treatment or punishment"

and/or the Article 2 Right to life, and/or the rights of others.

The European Court of Human Rights, in October 2019, found that, in the case of *Lopez, Ribalda and others v Spain* (2019), the use of covert surveillance to record supermarket employees, who were suspected of stealing, did not breach their Article 8 right to privacy. This overturned a previous decision and there were a number of issues, however, which the Court considered including: "whether and how employees had been informed; the length of time the monitoring was in place; whether there were legitimate reasons for the intrusion on privacy; whether less intrusive methods could be used and the consequences to the employees. It

was ruled that due to the significant sums of money stolen, the actions taken by [the supermarket] had been proportionate. Relevant factors included the limited time the covert cameras had been in place (10 days), and that only a trade union representative and store manager had seen the incriminating footage prior to the employees' dismissals." (Brabners, 2019, p.1)

The rights involved, and the need to balance them, have also been reinforced by the UN Convention on the Rights of Persons with Disabilities (2006). Article 15 states that "No one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment" and Article 16 requires that "States Parties shall take all appropriate legislative, administrative, social, educational and other measures to protect persons with disabilities, both within and outside the home, from all forms of exploitation, violence and abuse, including their gender-based aspects." The measures to ensure these rights must also be balanced with Article 22 which requires that

> *"No person with disabilities, regardless of place of residence or living arrangements, shall be subjected to arbitrary or unlawful interference with his or her privacy…"*

The benefits vs harm debate – the potential intended and unintended effects of the use of CCTV

Another way to frame the debate on the use of CCTV in care home settings is to consider whether the potential benefits outweigh the potential harms. A useful starting point for this way of approaching the debate is to clarify what the intended purposes and effects of the use of CCTV are. These usually include the monitoring of residents, staff and visitors to prevent harm, improve care and/or detect or record abuse. It is also usually restricted to overt surveillance of communal areas. If one of the main aims is to prevent and/or detect deliberate abuse this raises an immediate question of effectiveness as private areas will not be monitored.

The question of whether CCTV is effective, or the most effective, method of achieving these aims can be further informed by the available evidence which will be considered later in this report. Evidence from related areas may also be useful to consider. A very recent narrative review of the 'Ethical and Practical Issues in Video Surveillance of Psychiatric Units' (Appenzeller et al., 2019, p.1) found that: "The ethical challenges and practical implications differ between surveillance of public spaces versus private areas, such as bedrooms or seclusion rooms. The most common reason for video surveillance was to increase security and safety. However, empirical evidence suggests that it is not useful in increasing the security of shared spaces on psychiatric wards. Some evidence exists for clinical benefits of video surveillance in private spaces (e.g., allowing patients to sleep undisturbed). Video surveillance can increase patients' choices regarding monitoring options [for example when there is a high risk of self-harm, suicide and/or violence]. The main ethical conflict lies in balancing patients' autonomy

and privacy versus patient and staff security and safety." They conclude that "whether video monitoring is used in the most effective and ethical manner needs to be reconsidered. Available evidence does not support its use as a security measure. More research is needed to evaluate the benefits, risks, and best practices of using video monitoring for patient observation, with consideration given to increasing the role of patient consent."

In terms of the ethical debate it is perhaps reasonable to conclude that the intended benefits are contested. Even what might be regarded as the least controversial claim, that CCTV footage of an incident would provide helpful detail of what happened (to protect and/or investigate those involved) has been questioned: “It is also suggested that CCTV footage could be used as evidence when instigating adult protection procedures or evaluating violent incidents. However, it is debatable whether it does provide reliable evidence. Most CCTV monitoring does not include an audio element, and therefore if used as evidence will be completely reliant upon visual images. The nature of CCTV footage and the story that it might convey about a particular incident was highlighted by African Caribbean staff at Springfield University Hospital, who were concerned that their body language might be misconstrued on video footage (Chambers and Gillard, 2005).“ (Desai, 2009, p.7) The evidence that is available must also be considered with some caution, as Greenhalgh et al. (2013, p.86) suggest it “may reflect pro-innovation bias and a misplaced modernist dream.” They encourage more consideration of what people themselves identify as important and, from their own research on the use of technologies report that “Almost universally, our participants identified relationships, especially with family members and old friends, as what mattered to them most.” (p. 90)

The unintended effects of the use of CCTV are also important to consider and may be less positive. Macnish (2015) suggests CCTV may have a chilling effect on relationships in care home settings and communicate that people are not trusted. Scott (2014) suggests that CCTV could offer false reassurance of the quality of care and/or absence of abuse. Another concern is that CCTV could be used inappropriately to lower staffing levels (Hayward, 2017).

Perspectives of service users who live in care home settings, their family and friends, and staff who work in care home settings

This debate raises the need to clarify who the intended beneficiaries are in relation to the use of CCTV. Although most stated aims involve protection for service users it may be that drivers include a combination of other factors, such as families' desire for reassurance; staff's concern about false allegations or service providers' concern about staff, families and service users. Policy and guidance for the use of CCTV in care home settings usually specifies that it should only be introduced following consultation with and the agreement of those affected. This becomes a complex issue when you consider that there may be a number of different groups involved (residents, family/friends, other visitors, staff) who may not agree and, even within groups there may not be a consensus.

Niemeijer et al. (2015) from their ethnographic study of care home settings for people with dementia and intellectual disabilities report that service users feel stigmatized by surveillance technologies, missed the company (time with people), and do not like being "watched." Care home provider HC-One conducted a survey in 2014 to ask people their views on the possibility of an opt-in visible camera

system in their care homes. They collected responses from approximately 7,330 members of staff, more than 3,300 relatives and 1,535 residents. They found that 87% of relatives and 63% of staff were in favour but only 47% of residents. A more recent survey of 2,333 care home owners, managers and staff by carehome.co.uk reported that 30% of staff would like there to be CCTV in both the communal areas and bedrooms of care homes (Learner, 2019).

Legal debates including issues of capacity and consent

Legal debates overlap with the rights based arguments. For example the issue of consent is directly relevant to the right to privacy. “Privacy is inextricably linked to the notion of consent. In terms of legislation affecting the UK, Article 8 (1) of the Human Rights Act 1998 gives individuals the right to respect for a private and family life. This is a qualified right in that it can be limited if there is a legitimate aim...There are ethical issues, therefore, stemming from whether or not a person knows about, and gives their permission to be the subject of surveillance. The issue of consent to the use of surveillance in health and care settings relates not only to that of the person using the service, but also to families, carers, visitors and staff.” (Social Care Institute of Excellence, 2014, p.7)

Consideration of consent must also involve whether the person has the decision making ability or mental capacity to make the relevant decision. If not, currently under the Common Law, and soon, assuming the Mental Capacity Act (Northern Ireland) 2016 is fully implemented as planned, under statute law, then the decision to proceed with the use of CCTV must be made in the person’s subjective best interests. In order to determine whether it is in the person’s best

interests the available evidence of effectiveness should be considered as well as the best available estimate of what the person's wishes and preferences may be. Again, this may vary across time and people in communal settings.

There are a number of other legal considerations, such as those relating to data protection, freedom of information and investigatory powers, and these are discussed in more detail in the following section on policies and guidance.

Practical and economic perspectives – what are the possible and best use of scare resources

In addition to the ethical issues involved, there are also some key practical and economic perspectives that should be considered. An initial practical issue is about how and by whom the CCTV footage will be recorded, accessed and stored (and for how long will it be kept). It would seem unlikely that there would be sufficient resources for CCTV to be monitored at all times and, even that may not entail a comprehensive monitoring of all cameras at all times. If footage is accessed only when a concern is raised there could still be practical and resource barriers to all the relevant footage being viewed in detail.

A very useful concept from economics may also be relevant to discuss. "Since resources are scarce relative to needs, the use of resources in one way prevents their use in other ways. The opportunity cost of investing in a healthcare intervention is best measured by the health benefits…that could have been achieved had the money been spent on the next best alternative intervention or healthcare programme." (Palmer and Raftery, 1999, p.1551). In other words it is

important to consider if the resources that would be needed to install, operate, monitor and review CCTV systems could be used in alternative ways to try to achieve, or possibly even exceed, the anticipated improvements in care.

The next section explores some of the current policies and guidance for the use of CCTV in care home settings. A good example of the most common policy position was recently summarised in a briefing produced by the House of Commons Library (2018) for a debate on the issue. It states that:

“The Government does not object to the use of CCTV cameras in care homes on a case by case basis. Care home owners should consult with and seek the consent of residents and their families on their use. The abuse or neglect of vulnerable people is deplorable. The Government has strengthened the powers of the Care Quality Commission (CQC) to prosecute providers for unacceptable care, including abuse. The Government recognises that cases of abuse and neglect have been exposed as the result of hidden cameras. We acknowledge that there are occasions when it may be appropriate for their use to be considered. Closed circuit television (CCTV) should not be regarded as a substitute for proper recruitment procedures, training, management and support of care staff, or for ensuring that numbers of staff on duty are sufficient to meet the needs of users of services. It is a legal requirement that care providers must ensure that the safety, welfare, privacy and dignity of service users at all times. The Government considers that the widespread introduction of CCTV into care homes would raise important concerns about residents’ privacy, as well as practicality. The use of CCTV and other forms of covert surveillance should not be routine, but should be considered on a case by case basis. The Government does not object to the use of CCTV in individual care homes or by the families of

residents, provided it is done in consultation with and with the permission of those residents and their families.”

Policies and guidance for the use of monitoring technology in care home settings

The complexity of these issues are not unique to Northern Ireland and this section presents key extracts from a selection of policies and guidance from a range of jurisdictions that have already been developed on the use of CCTV in care home settings. The resources, and links to them, are listed below and then the most relevant sections and/or summaries from each document are presented.

The policy and guidance resources

GENERAL PRINCIPLES

Niemeijer, A., Frederiks, B., Depla, M. F. I. A., Eefsting, J., & Hertogh, C. M. P. M. (2013) The place of surveillance technology in residential care for people with intellectual disabilities: is there an ideal model of application. *Journal of Intellectual Disability Research*, *57*(3), 201-215. https://doi.org/10.1111/j.1365-2788.2011.01526.x

Fisk, M. (2015) Surveillance technologies in care homes: Seven principles for their use. *Working with Older People*, Volume 19 (2): 51-59. DOI: 10.1108/WWOP-11-2014-0037. http://dx.doi.org/10.1108/WWOP-11-2014-0037

RELATED GUIDANCE

Related guidance (on the general use of surveillance cameras and the associated data)

Home Office (2013) *Surveillance Camera Code of Practice*. London: Home Office. Available online at

https://www.gov.uk/government/publications/surveillance-camera-code-of-practice

Surveillance Camera Commissioner (2014) *Code of Practice. A Guide to the 12 principles*. London: Surveillance Camera Commissioner. Available online at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/368115/Leaflet_v6_WEB.pdf

Information Commissioner's Office (2018) *In the picture: A data protection code of practice for surveillance cameras and personal information*. Wilmslow: Information Commissioner's Office. Available online at https://ico.org.uk/media/1542/cctv-code-of-practice.pdf

Ontario - Information and Privacy Commissioner of Ontario (2015) *Guidelines for the Use of Video Surveillance*. Toronto: Information and Privacy Commissioner of Ontario. Available online at https://www.ipc.on.ca/resource/guidelines-for-the-use-of-video-surveillance/

New Zealand – Privacy Commissioner (2009) *Privacy and CCTV. A guide to the Privacy Act for businesses, agencies and organisations.* Wellington: Office of the Privacy Commissioner. Available online at https://www.privacy.org.nz/news-and-publications/guidance-resources/privacy-and-cctv-a-guide-to-the-privacy-act-for-businesses-agencies-and-organisations/

SPECIFIC GUIDANCE BY JURISDICTION

England	Care Quality Commission (2015, updated in 2018) *Using surveillance in your care service*. Newcastle upon Tyne: Care Quality Commission. Available online at https://www.cqc.org.uk/guidance-providers/all-services/using-surveillance-your-care-service Office for Standards in Education, Children's Services and Skills (Ofsted) (2019) Surveillance and monitoring in residential

	childcare settings. Available online at https://www.gov.uk/guidance/surveillance-and-monitoring-in-residential-childcare-settings
Scotland	Care Inspectorate (2018) *Guidance for care providers in Scotland using CCTV (closed circuit television) in their services.* Dundee; Care Inspectorate. Available online at https://hub.careinspectorate.com/media/1515/guidance-for-care-providers-in-scotland-using-cctv-in-their-services.pdf
Republic of Ireland	Health Information and Quality Authority (2013) *National Standards for Residential Services for Children and Adults with Disabilities.* Dublin: Health Information and Quality Authority. Available online at https://www.hiqa.ie/reports-and-publications/standard/national-standards-residential-services-children-and-adults National Disability Authority (2015) NDA advice on CCTV in residential settings. Dublin: National Disability Authority. Available online at http://nda.ie/nda-files/NDA-Advice-re-CCTV-in-Residential-Settings.pdf
Northern Ireland	Regulation and Quality Improvement Authority (2016) *Guidance on the use of Overt Closed Circuit Televisions (CCTV) for the Purpose of Surveillance in Regulated Establishments and Agencies. Belfast: Regulation and Quality Improvement Authority*. Available online at https://www.rqia.org.uk/getattachment/01e1fbdb-8b2e-4c20-b102-6215cce13961/CCTV-Guidance-for-the-Purpose-of-Surveillance-in-Regulated-Establishments-and-Agencies.pdf.aspx

General principles

There have been some attempts to develop general principles for the use of surveillance technologies in care home settings. Niemeijer et al. (2013) explored whether there might be an ideal model for the use of surveillance technology, focusing on its application in residential care for people with intellectual disabilities. They highlight the need to consider the different perspectives and of the client, the institution and the staff who are using the technology and suggest that the ideal application of surveillance technology would entail that:

> "1. It supports and enhances the capabilities of the client;
> 2. It contributes to the reduction of freedom restrictions/restraints;
> 3. It is based on a vision on its benefits and risks; and
> 4. Staff are equipped to work safely with Surveillance Technology;
> 5. It is user-friendly; and
> 6. It attends to the client." (p. 206)

They conclude that "when it comes to views on Surveillance Technology, there appears to be an inherent duality, rooted in the moral conflict between safety and freedom or autonomy. What is more, elaboration on abstract concepts often presumed to be self-evident, whether ethical or not, has proven to be difficult." (p. 209).

Dr Malcolm Fisk is a Senior Research Fellow at the Centre for Computing and Social Responsibility at De Montfort University and he has proposed seven principles for the use of surveillance technologies (Fisk, 2015) which are based on the premise that surveillance is an accepted and potentially positive aspect of care. He does, however, acknowledge that the ethical use of surveillance

depends on the benefits it may provide – the central issue of effectiveness which will be the focus of the next section of this report.

“The principles focus on overt surveillance - with covert surveillance being considered as only appropriate when required by an appropriate regulatory or legal body. They recognise that the potential for privacy to be compromised is greatest where personal tasks are often undertaken i.e. the bathroom or bedroom. They acknowledge, furthermore, that abuse can take place anywhere - this justifying consideration of the use of surveillance technologies in all areas of care homes, albeit that protocols and procedures will vary…

1 *Any reasonable level of surveillance (including cameras) is appropriate for common or public areas in care homes… This principle reflects the view that surveillance is legitimate in care homes and is potentially beneficial. Care homes must carry responsibility for the maintenance and proper working of such technologies…*

2 *Care homes should be able to provide or should be willing to permit or facilitate, the use of surveillance technologies (including cameras) within a resident's room or other private areas…*

3 *The location of surveillance technologies should be carefully considered. They should be visible or otherwise clearly known to be present…*

4 *Staff should be fully aware of their responsibilities in relation to surveillance technologies…*

5 *Access to data, images, audio or video footage should be restricted only to authorised persons or agencies in particular, defined circumstances…*

6 *Data, images, audio or video footage should be treated as if owned by the resident but where it is gathered, held and used for his/her benefit…*

7 *Minimising intrusion. Consent given for the use of any surveillance technologies with the potential to intrude excessively on an individual's privacy should always be subject to approval by the appropriate regulatory agency." (pp. 7-9)*

Related guidance (on the general use of surveillance cameras and the associated data)

The Home Office (2013) have produced a Code of Practice for the use of surveillance cameras in *public places* in England and Wales. It sets out concisely the central tension in the use of such technology:

"Modern and forever advancing surveillance camera technology provides increasing potential for the gathering and use of images and associated information. These advances vastly increase the ability and capacity to capture,

store, share and analyse images and information. This technology can be a valuable tool in the management of public safety and security, in the protection of people and property, in the prevention and investigation of crime, and in bringing crimes to justice. Technological advances can also provide greater opportunity to safeguard privacy. Used appropriately, current and future technology can and will provide a proportionate and effective solution where surveillance is in pursuit of a legitimate aim and meets a pressing need.

In general, any increase in the capability of surveillance camera system technology also has the potential to increase the likelihood of intrusion into an individual's privacy. The Human Rights Act 1998 gives effect in UK law to the rights set out in the European Convention on Human Rights (ECHR). Some of these rights are absolute, whilst others are qualified, meaning that it is permissible for the state to interfere with the right provided that the interference is in pursuit of a legitimate aim and the interference is proportionate. Amongst the qualified rights is a person's right to respect for their private and family life, home and correspondence, as provided for by Article 8 of the ECHR." (p. 9)

It specifies 12 guiding principles:

1. "Use of a surveillance camera system must always be for a specified purpose which is in pursuit of a legitimate aim and necessary to meet an identified pressing need.
2. The use of a surveillance camera system must take into account its effect on individuals and their privacy, with regular reviews to ensure its use remains justified.
3. There must be as much transparency in the use of a surveillance camera system as possible, including a published contact point for access to information and complaints.

4. There must be clear responsibility and accountability for all surveillance camera system activities including images and information collected, held and used.
5. Clear rules, policies and procedures must be in place before a surveillance camera system is used, and these must be communicated to all who need to comply with them.
6. No more images and information should be stored than that which is strictly required for the stated purpose of a surveillance camera system, and such images and information should be deleted once their purposes have been discharged.
7. Access to retained images and information should be restricted and there must be clearly defined rules on who can gain access and for what purpose such access is granted; the disclosure of images and information should only take place when it is necessary for such a purpose or for law enforcement purposes.
8. Surveillance camera system operators should consider any approved operational, technical and competency standards relevant to a system and its purpose and work to meet and maintain those standards.
9. Surveillance camera system images and information should be subject to appropriate security measures to safeguard against unauthorised access and use.
10. There should be effective review and audit mechanisms to ensure legal requirements, policies and standards are complied with in practice, and regular reports should be published.
11. When the use of a surveillance camera system is in pursuit of a legitimate aim, and there is a pressing need for its use, it should then be used in the

most effective way to support public safety and law enforcement with the aim of processing images and information of evidential value.

12. Any information used to support a surveillance camera system which compares against a reference database for matching purposes should be accurate and kept up to date." (pp. 10-11)

The Surveillance Camera Commissioner (2014), whose role was created by the Protection of Freedoms Act 2012 to further regulate CCTV, has provided a series of questions to assist people to consider and observe the 12 principles. Their questions are:

"Principle 1: What's your system for? Do you review its use?

Principle 2: Have you carried out a privacy impact assessment? Do you publish your privacy impact assessment?

Principle 3: Do you have signage in place to say surveillance is taking place? Is there a published point of contact for people to raise queries or complaints with?

Principle 4: Who's responsible for your system? Are your staff aware of their responsibilities?

Principle 5: Do you have clear policies and procedures in place? Do your staff know what your policies and procedures are?

Principle 6: How long do you keep images/information? How do you make sure images/information is deleted once they're no longer needed?

Principle 7: Do you have a policy on who has access to the stored information? Do you have a policy on disclosure of information?

Principle 8: Do you follow any recognised operational or technical standards?

Principle 9: Do you make sure that the images captured by your system are caught securely? Are only authorised people given access to the images?

Principle 10: Do you evaluate your system regularly to make sure it's still required? Could there be an alternative solution to a surveillance camera system?

Principle 11: Can the criminal justice system use the images and information produced by your surveillance camera system? Do you have a policy on data storage, security and deletion?

Principle 12: Do you use any specialist technology such as ANPR, facial recognition, Body Worn Video (BWV) or remotely operated vehicles (Drones)? Do you have a policy in place to ensure that the information contained on your database is accurate and up to date?" (pp. 2-3)

The Information Commissioner's Office (2018) has also produced a data protection Code of Practice for surveillance cameras and personal information. The Code explains that "The basic legal requirement is to comply with the DPA [Data Protection Act 2018] itself. This code sets out the Information Commissioner's recommendations on how the legal requirements of the DPA can be met. Organisations may use alternative methods to meet these requirements, but if they do nothing they risk breaking the law.

This code also reflects the wider regulatory environment. When using, or intending to use surveillance systems, many organisations also need to consider

their obligations in relation to the Freedom of Information Act 2000 (FOIA), the POFA [Protection of Freedoms Act 2012], the Human Rights Act 1998 (HRA) and the Surveillance Camera Code of Practice issued under the Protection of Freedoms Act (POFA code)." (p. 4)

It is important to note that the majority of the Protection of Freedoms Act 2012's provisions apply to England and Wales only but some do extend to Northern Ireland including "The requirement for local authorities to obtain judicial approval for the application and use of covert surveillance powers under RIPA" [Regulation of Investigatory Powers] (Paragraph 80 of the Explanatory Notes available online at http://www.legislation.gov.uk/ukpga/2012/9/notes/contents).

The Information Commissioner's Office's Code covers "the use of camera related surveillance equipment including: Automatic Number Plate Recognition (ANPR); body worn video (BWV); unmanned aerial systems (UAS); and other systems that capture information of identifiable individuals or information relating to individuals." (p. 6) It acknowledges that "Using surveillance systems can be privacy intrusive. They are capable of placing large numbers of law-abiding people under surveillance and recording their movements as they go about their day-to-day activities. You should therefore carefully consider whether or not to use a surveillance system. The fact that it is possible, affordable or has public support should not be the justification for processing personal data. You should also take into account the nature of the problem you are seeking to address; whether a surveillance system would be a justified and an effective solution, whether better solutions exist, what effect its use may have on individuals, and whether in the light of this, its use is a proportionate response to the problem. If

you are already using a surveillance system, you should regularly evaluate whether it is necessary and proportionate to continue using it." (p. 9)

These are complex issues which are being considered internationally and so two general examples of guidance, from Ontario in Canada, and from New Zealand, are mentioned here. In Ontario the Information and Privacy Commissioner (2015) has produced *Guidelines for the Use of Video Surveillance.* These are prefaced with a quote from Alan Westin's 1967 book *Privacy and Freedom*, "If all that has to be done to win legal and social approval for surveillance is to point to a social problem and show that surveillance would help to cope with it, then there is no balancing at all, but only a qualifying procedure for a license to invade privacy." The Guidelines further acknowledge "While video surveillance may help to increase the safety of individuals and the security of assets, it also introduces risks to the privacy of individuals whose personal information may be collected, used and disclosed as a result of the technology. The risk to privacy is particularly acute because video surveillance may, and often does, capture the personal information of law-abiding individuals going about their everyday activities. In view of the broad scope of personal information collected, special care must be taken when considering whether and how to use this technology." (p. 2)

In New Zealand the Privacy Commissioner (2009) produced *Privacy and CCTV. A guide to the Privacy Act for businesses, agencies and organisations.* It covers a range of issues relating to privacy to be taken into account if considering the use of camera surveillance systems including: "being clear about why you are collecting the information about people; making sure people know about the cameras and their purpose; how you use CCTV images; whether you disclose CCTV images or information to others (such as the Police); how long to keep the

images for; keeping images safe, and making sure that only authorised people can see them; and rights of access to the information by the individual concerned." (p. 4)

Specific guidance by jurisdiction

These general principles and guidance for the use of surveillance cameras in public places are important to be aware of but there has also been specific guidance developed for the use of CCTV in care settings. Key extracts from existing guidance for England, Scotland, Republic of Ireland and Northern Ireland are presented below.

The Care Quality Commission for England has produced guidance (2015, updated in 2018) on *Using surveillance in your care service*. It sets out a series of steps that service providers should follow if considering the use of surveillance technology such as CCTV, cameras and microphones. It also makes the important distinction been overt (open) surveillance, which comes under its guidance, and covert (or hidden) surveillance by public bodies which can only be authorised under the Regulation of Investigatory Powers Act (RIPA) 2000. The Care Quality Commission steps include:

- Set out your reasons for using surveillance – this involves identifying the purpose of the proposed surveillance and consideration of whether surveillance is actually the best way to achieve that aim
- Carry out an initial assessment – this includes consideration of less intrusive alternatives and exploration of the relevant regulations including GDPR [General Data Protection Regulation], the Human Rights Act 1998, RIPA and completing a data protection impact assessment

- Carry out a needs assessment – this considers how surveillance may help meet the needs of service users
- Consult people before using surveillance including service users, their families and friends, staff, trade unions and other people who visit your service
- Consider issues of consent
- Keep a record of these steps
- If surveillance is used you should consider the most appropriate equipment, the staff training needed and how records will be kept
- If surveillance is used you should still be concerned about treating people with dignity and respect, and minimising the impact on their privacy.

Also in England, the Office for Standards in Education, Children's Services and Skills (2019) produced guidance but focused on surveillance and monitoring in residential childcare settings. They specify that “The use of any kind of surveillance must meet the needs of the individual and be justified at the time of its use. The use of surveillance is only permissible at the direction of a court or as a last resort to keep an individual child safe. It is not acceptable to use surveillance as a default approach to monitoring children’s behaviour, neither should groups of children be subject to indiscriminate monitoring. The use of surveillance and monitoring devices should be for the protection of the children only, not staff. This will differ for secure children’s homes… The effect of the use of surveillance or monitoring devices on individuals and their privacy should be considered. Regular reviews should take place to ensure that its use remains justified. Parents, children (if possible) and social workers should give consent to the use of surveillance and be informed about how they can make a complaint about its use, if necessary. Images and information should be stored securely, for

their stated purpose, and only for as long as necessary…You cannot carry out covert surveillance unless this has been directed by a court."

In the Republic of Ireland, the Health Information and Quality Authority (HIQA) (2013) in their *National Standards for Residential Services for Children and Adults with Disabilities* included within the Standard (2.2) that "The residential service is homely and accessible and promotes the privacy, dignity and welfare of each person" (p. 75) the specific requirement (2.2.12) that "Where closed circuit television (CCTV) systems are used, they do not intrude on privacy and there is a policy on the use of CCTV which is informed by relevant legislation." (p. 76)

The National Disability Authority (NDA) (2015) in Ireland have also produced specific *NDA advice on CCTV in residential settings* which includes a briefing paper on the range of issues involved. In contrast to the other sources of policy and guidance in this section, which tend to recommend a process and principles by which CCTV could be considered, the NDA provides definite advice and an outline of the rationale and evidence for it. It specifies that "The National Disability Authority advises against the introduction of CCTV as practice in residential disability centres for the purpose of detecting or deterring abusive behaviour.

The introduction of CCTV technology cannot be a substitute for tackling issues around culture, practice, and fundamental respect for the human rights of service users that should underpin disability services. People with disabilities say that what makes them feel safe is being treated with dignity and respect by staff, feeling included, being supported to be independent and to advocate for themselves. Even with CCTV, abuse can take place off-camera or in private zones like bedrooms if there is a negative culture and a lack of respect.

The introduction of CCTV would also raise serious issues around privacy, consent, and security and retention of recorded material. In practical terms, the volume of recorded material would make it very difficult and expensive to review even a sample." (p.1)

It does, however, also recommend the exploration of the potential of the use of other technologies to support people. The NDA's briefing paper then provides a clear outline of the reasons for its advice. It sets some of the key issues that have to be considered:

- "HIQA's National Standards for Residential Services for Children and Adults with Disabilities (2013)
- Legislation on the use of CCTV
- Other consideration regarding Data Protection
- The impact of CCTV on residents and staff
- The effectiveness of CCTV in capturing and preventing abuse
- Technological issues regarding CCTV
- Value for Money" (pp. 2-3)

The Briefing Paper concludes with a summary of key points:

- "HIQA standards on the safe and effective care and support of children and adults with disabilities in residential settings (2013) state that people with disabilities should be treated with dignity and respect by staff, and services should promote people's privacy. A key element to ensuring that people with disabilities feel safe and receive safe and effective care is that they can

trust the staff in residential centres and that they form positive relationships with them

- There is concern that CCTV may impact adversely on the privacy of people with disabilities in residential services
- The HIQA standards, the legislation on CCTV and on data protection are all pertinent to the privacy concern
- The NDA advises that people who use residential services for people with disabilities should be asked for their views on the use of CCTV in their home, It would also be important to have an effective means of engagement and consultation with residents with regards to what makes them feel safe before any programme for the installation of CCTV proceeds
- There is limited research on the effectiveness of CCTV in preventing abuse and increasing the safety of people with disabilities
- Research also shows that CCTV may have a negative impact on the behaviour of residents and staff
- The cost of implementing and maintaining CCTV equipment and data needs to be carefully considered in the context of its effectiveness and providing value for money
- A key issue that impacts on the safety of people with disabilities in residential services is how they are treated by staff. The culture of a residential centre will influence how staff perceive and treat people with disabilities. If the culture promotes a positive and respectful behaviour towards people with disabilities then this is central towards ensuring their safety in a residential service. The NDA advises that the factors that will transform the culture in residential settings should be examined in the first instance before CCTV is considered" (p. 7).

Finally in this section, the Regulation and Quality Improvement Authority (2016) in Northern Ireland have already produced *Guidance on the use of Overt Closed Circuit Televisions (CCTV) for the Purpose of Surveillance in Regulated Establishments and Agencies.* This guidance provides a set of key principles; how the need for CCTV should be assessed; that data protection requirements for any footage; that covert and hidden cameras are beyond the scope of RQIA's guidance, the importance of staff awareness, the need for policies and procedures, the need for appropriate record keeping, the importance of suitable equipment, and the consent and capacity issues involved. It also details the relevant wider legislative, regulatory and guidance context of the use of CCTV.

The RQIA guidance provides a helpful definition of surveillance as "is the monitoring of a place, person, group or ongoing activity in order to gather information. There are many forms of surveillance available some of which are overt (where the person or group would be reasonably aware of the surveillance occurring), and those which are covert (where the person or group would not be reasonably aware of the surveillance occurring). These include a range of systems and equipment such as CCTV, hidden cameras, WiFi cameras, radio frequency identification (RFID), sound monitoring and recording equipment, monitoring equipment for medical treatment purposes and many other types of systems." And clarifies that "This guidance relates only to the use of overt CCTV systems which may be deployed internally, externally or adjacent to regulated establishments." (p. 3)

One of the principles in the guidance is that “CCTV should not be used in areas and rooms where service users normally receive personal care or where they could reasonably expect relative privacy. This includes areas such as:

- bedrooms
- sanitary accommodation
- treatment rooms
- dining rooms
- dayrooms/lounges/sitting rooms etc.
- Corridors and internal circulation spaces used by service users for purposes associated with normal daily living.” (p. 6)

In the Consent and Mental Capacity section of the guidance it is stated that:
“This guidance is on the use of overt CCTV and therefore due consideration should be given to obtaining consent from all relevant parties. Where there are instances in which consent is withheld or cannot be obtained (due to cognitive difficulties etc.) the appropriateness of the use of CCTV must be considered. The service provider must at all times be able to demonstrate that the use of CCTV outweighs any actual or potential interference with the service users’ experience of privacy or dignity.” (p. 8)

This requirement again links to the question of effectiveness. In order to determine whether the use of CCTV is appropriate and in the best interests of the service user, an important consideration should be the available evidence of its effectiveness.

Methodology for the review of the evidence of the effectiveness of the use of CCTV in care home settings

A Rapid Evidence Assessment (REA) approach was used to identify the international evidence of the effectiveness of the use of CCTV in care home settings. REAs provide more thorough syntheses than narrative reviews, and are valuable where a robust synthesis of evidence is required, but the time or resources for a full systematic review are not available. The process involves the reviewers developing and then specifying search strategies. Each study was briefly quality assessed using a standardised approach. The design follows the UK Government's Social Research Centre's (2013) guidance on conducting Rapid Evidence Assessments.

The key features of the REA methodology are summarised below:

Searching: Searching is the process of locating evidence that might be relevant to the review questions. We developed a targeted, focussed search strategies for the REA.

Screening: Screening is conducted to determine which of the located studies are directly relevant to the review questions. That is, we assessed each identified study to determine whether it should be included in the review. We used clearly defined inclusion criteria, and double-screened a sample of 10% of studies to ensure inter-rater reliability.

Quality assessment: Quality assessment involved evaluating the quality and methodological rigour of the primary research or evidence that is included in the review. This helped in making judgements about the level of confidence that we can have in the findings of the included studies. We used a basic measure of research quality to provide some indication of the relative strengths and limitations of the included studies. Each study was briefly assessed for quality and relevance to the review and scored as ++ (high quality and relevance); + (moderate quality and/or relevance) and – (low quality or relevance) and any specific quality issues considered.

Data extraction: We used comprehensive data extraction tools to capture all necessary data, including study context, population, intervention content, and effectiveness and cost-effectiveness findings into an Excel spreadsheet. The spreadsheet is available, on request, to ensure transparency and reproducibility of the review.

Data synthesis: Data synthesis is the process by which we identified trends and drew conclusions across the body of evidence reviewed. In this review the main method was a narrative synthesis (Popay et al., 2006) of the key themes.

Database development: We used standard reference management software (EndNote) to develop the database of relevant literature.


1: Searching the relevant databases and other sources.
2: Screening the results to determine if they should be included in the review.
3: Assessing the quality of the relevant research.
4: Extracting the detailed data from the included studies.
5: Synthesising these data into the most relevant aspects of the evidence.
6: Putting all the results together in a summary table.
AXIS

Search strategy

Databases: For this review, we searched the following 10 databases, which were those most relevant to the research questions and which provided an efficient way of identifying the greatest number of relevant studies within the short timeline for this project: CINAHL (EbscoHOST), International Bibliography of the Social Sciences, MEDLINE (OvidSP), MEDLINE In-process and Other Non-Index Citations (Ovid SP), PsycINFO, PubMed, SCIE, Social Policy and Practice, Social Sciences Citation Index and EconLit.

Grey literature searches: We searched key websites and the OpenGrey database to identify reports and official documents relevant to policy and guidance regarding the use of CCTV in care home settings.

Date of publication: We included studies published since 2009, in order to identify studies relevant to modern contexts and political changes but some seminal research from before 2009 was included.

Language of study: We included studies published in English.

Key words: the following key words were used to search the databases.
'CCTV OR monitoring OR surveillance AND "care home" OR residential home OR nursing home OR supported housing OR communal living OR group living'

Screening

We used an explicit set of eligibility criteria to select studies that have been identified from the search to include into the review.

Study design: We included studies that reported primary data on the effectiveness of CCTV in care home settings and systematic reviews of such studies. This included:

- Randomised controlled trials and other controlled trials;
- Before-and-after studies assessing outcomes after a change in guidance, policy or legislation;
- Observational studies comparing outcomes from different jurisdictions;
- Qualitative studies reporting views of service users and providers;
- Economic analyses of the interventions and policy changes;
- Systematic reviews of comparative studies;
- Narrative reviews that report primary data from such studies (used to identify additional primary research studies).

We also selected studies for the review based on the population, intervention, comparators, outcomes and setting of interest, care homes.

The searches also identified literature which did not address issues of effectiveness but was useful to inform the earlier sections of this report on: the general use of technology in care home settings; the relevant ethical debates; and the existing guidance on the use of CCTV in care home settings.

Evidence of the effectiveness of the use of CCTV in care home settings

A total of 25 studies were included in the rapid evidence assessment. There were very few studies that actually tested the effectiveness of CCTV within care homes settings, however we included research that had general relevance to the ethical and practical use of monitoring technologies. These included so called 'Smart Home' technologies that can assist people to 'age in place' have types of monitoring often applied in residential care settings. Research evaluating alternative assisted technology that can reduce the need for CCTV was included and studies that have investigated attitudes towards surveillance within healthcare settings. One study considered the effectiveness of CCTV as a tool for solving crime, and another one study examined technology to monitor staff performance; both have relevance for the debate.

The majority of studies were qualitative in design (15), seven were quantitative and one study consisted of an economic cost-effectiveness analysis of two randomised control trials (RCTs) of healthcare monitoring. We also included a mixed-methods trial of a home monitoring system (Lie, Lindsay & Brittain, 2015; Vines et al. 2013) and a systematic review of camera surveillance in residential disability settings. Ten studies were based on UK research, others were conducted in Australia (2 studies), the Netherlands (5), Sweden (2), the USA and Canada (5 studies). Most of the research is fairly recent, and although our search strategy was confined to a period of the last ten years, half of them had been published within the last five (2015-2019). We included two studies published in 2007-08 as their findings were pertinent to the review. Table 1 gives a summary of each included study.

The quality of the research designs reported was reasonably low; of the 23 empirical studies, only two employed an RCT methodology to assess 'smart home' technology and CCTV versus physical restraint in dementia patients. A PhD thesis from 2018 used a double RCT design to examine the cost-effectiveness of tele-monitoring and tele-healthcare in an English patient sample. The studies almost exclusively looked at care of older people and people with dementia. One study concerned residential care of people with learning disabilities and another used CCTV technology to monitor residential inpatient treatment of adolescents. As one of the authors concludes, there is virtually no academic research on the efficacy or residual effects of cameras in care homes (Berridge, 2019).

Hayward's systematic review (Hayward 2017) identified 43 papers and failed to establish any clear evidence of camera surveillance being effective in protecting the welfare of people with disabilities in residential care. He concluded that it was disliked by people with disabilities and was regarded with suspicion by staff. Functionality was limited and the ethical challenges associated with its deployment are considerable. It is expensive and difficult to trial and there is no evidence that camera surveillance increases functional performance, increases independence or improves quality of life. As with Welsh and Farrington's review of public area CCTV and crime prevention, the expectations of the use of CCTV often exceeded performance (Welsh and Farrington, 2009).

Table 1: Summary of included studies

Study/Country QR*	Methods	Population	Intervention	Summary	Quality Rating
Ashby 2017 UK	Quantitative Secondary data analysis	General population	CCTV footage captured by British Transport Police	CCTV significantly increased the chances of solving a crime except for covert crimes (e.g. drug/weapon carrying & fraud.	-
Berridge 2017 USA	Qualitative Semi-structured interviews	Older residents, family, tech & SW staff (independent living residence) (*N* = 41)	'QuietCare' passive monitoring system	Priorities of residents often different to those providing care. Threats to autonomy because of the alert system, fear of being watched. Use technology to reduce social isolation & make contact with staff. Very poor uptake (2%)	
Berridge 2019 USA	Quantitative Online survey	Healthcare professionals (*N* = 273)	Views of camera surveillance	Disadvantages outweigh the advantages. Undermines privacy, dignity & institutionalises care. Negative impact on staff – culture of mistrust. Culture change required to promote relational model of care.	+
Boström 2013 Sweden	Qualitative Focus group interviews	Older people (*N* = 5 focus groups)	Passive monitoring	Older people have ambivalent feelings towards technology – reduced their autonomy & control over their own lives.	-
Bradford 2018 Australia	Qualitative interviews	Older people (*N* = 8)	Smart Homes	Positive experiences – increased family communication & health autonomy.	-
Brown 2010 UK	Quantitative Survey	Home care workers (*N* = 266)	Technology for tracking staff	Increased impersonality of care & disillusionment with management.	+
Essén 2008 Sweden	Qualitative Interviews	Older people (*N* = 17)	Smart Homes	Care surveillance was seen as enabling – 'feeling cared for'.	-
Eyers 2013 UK	Qualitative Interviews	Older people care home residents (*N* = 14); care home staff (*N* = 13)	Passive monitoring	Relationship-based care supported by technology could improve older people's sleep in care homes.	+
Geertsema 2017 The Netherlands	Quantitative	Epilepsy patients in residential care	Development of an algorithm to help	Observation of CCTV data to develop a successful noncontact seizure detection algorithm in residential care for patients with predict seizures nocturnal convulsive epilepsy.	-
Gibson 2019 UK	Semi-structured qualitative interviews	People with dementia (*N* = 13); family carers (*N* = 26)	Smart Homes	Importance of habitual routines when introducing technology for people with dementia. Little knowledge or support available from healthcare professionals. Off the shelf products bought by family members often provided appropriate levels of support.	-

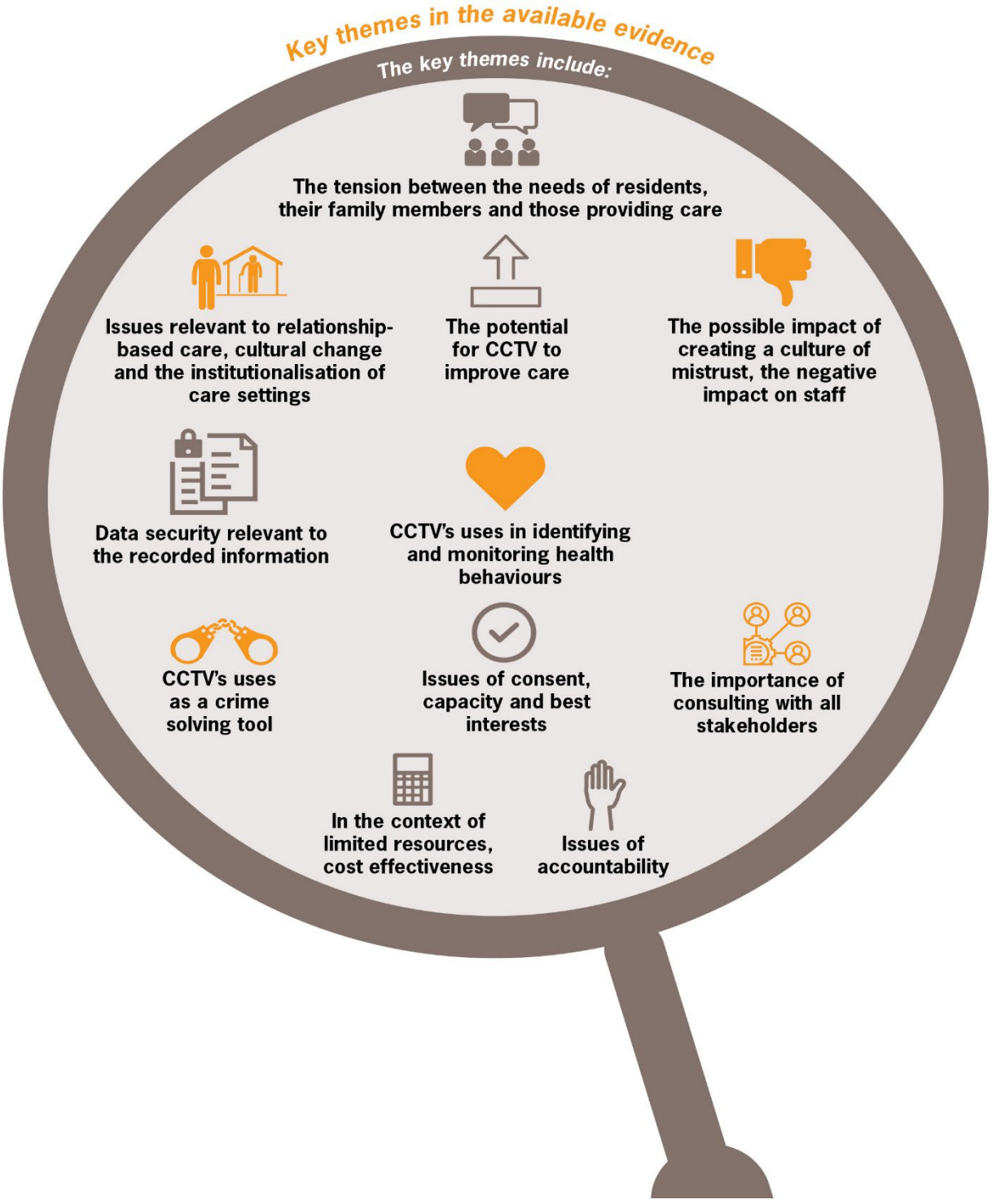
* Quality Rating (QR) - Each study was briefly assessed for quality and relevance to the review and scored as ++ (high quality and relevance); + (moderate quality and/or relevance) and – (low quality or relevance) and any specific quality issues considered.

Study/Country QR*	Methods	Population	Intervention	Summary	Quality Rating
Godwin 2012 UK	Qualitative Semi-structured interviews (*N*=27; *N*=9 triads (people with dementia, carers, professionals)	People with dementia, their family & professional carers (*N* = 4 residential care; *N* = 2 sheltered accommodation; *N* = 1 home with partner; *N* = 2 home alone)	Assistive technology	Evaluation of the equipment & the ethical decision making of the 3 groups involved. It the equipment is efficacious, it is ethical. Autonomy promoting devices were considered more ethical. More reservations about telecare. Developed an ethical checklist for professionals assessing possible use of AT.	+
Hall 2017, 2019 UK	Qualitative Embedded multiple case study (interviews, observation, case record review, other documentation)	Staff (*N* = 24) Residents (*N* = 9) Relatives (*N* = 9)	Passive monitoring	Residents & relatives not involved in the decision-making which limits understanding of technology. Mistrust between staff & management.	+
Hayward 2015 N/A	Systematic review	People with disabilities in residential care	Camera surveillance	No clear evidence of camera surveillance being effective in protecting the welfare of people with disabilities in residential care.	++
Henderson 2018 UK	Economic cost-benefit analysis of 2 RCTs	General population	Tele-health, Tele-monitoring	Did not improve self-reported QoL & other outcomes, nor reduce the cost of health & social care.	+
Hill 2012 USA	Qualitative Observation	Adolescent Residential Treatment for sexual abuse, trauma	Security staff video observation vs. overnight awake staff bedrooms during night-time	Security staff detected a total of 459 risky activities compared to 6 detected by overnight awake staff.	
Iedema 2010 Australia	Qualitative Observation	Hospital spinal unit	Video-based intervention	Video surveillance increased mutual benefits for clinicians & improved self-care & care for others.	-
Lie 2015 UK	Mixed methods evaluation of home monitoring technology	Older people interviews live field trials 1 (*N* = 24) and trial 2 (*N*= 43)	Home 'safety' passive monitoring	Pre- & post 6-12 week field trials. Infringement of privacy was a negative. Establishment of habits & norms engender feelings of safety & security. Other social network support systems reduce the need for monitoring & replacing social supports with technology negatively impacts on feelings of safety & security. System also relies on a willing 'monitor' to act as support. Importance of informed consent.	+
Mulvenna 2017 UK (NI)	Qualitative Workshops	People with dementia (*N* = 2) & dementia carers (*N* = 22)	N/A	Supportive of use of cameras in the home, workshop method could be useful for designing & implementing video solutions for dementia patients & their carers.	-

Study/Country QR*	Methods	Population	Intervention	Summary	Quality Rating
Niemeijer 2016 The Netherlands	Qualitative Ethnographic field study	Interviews with staff (N = 14) & interviews 340 hours of observation in a dementia care unit (*N* = 43 clients) & a residential care facility for ID (*N* = 42 clients)	Range of AT in use in both settings including DCET phones, movement & acoustic sensors, acoustic surveillance, electronic bracelets, automatic doors. GPS tags & video surveillance	Technology might increase autonomy as it can open up new safe spaces to wander. Electronic bracelets offered some level of freedom however cameras were seen as inherently intrusive. Some wearable technology can be seen as stigmatising. Issues of consent also discussed. Supports person-centred approach, no one size fits all.	+
Robinovitch 2013 Canada	Qualitative Observation	Care home residents	Observation of CCTV footage of falls	Often falls were caused by poor ergonomic design, call for better housing & redesign of furniture.	-
te Boekhorst 2013 The Netherlands	Quantitative	Nursing home patients with tech (*N* = 170); with physical restraints (*N* = 22)	CCTV vs physical restraint	Multilevel longitudinal regression found that residents subject to surveillance had better QoL but when controlling for confounders this was not significant. Sample size too small to generate any conclusions.	-
Tomita 2007 USA	Quantitative RCT	Older people (*N* = 114)	Smart Homes	Some difficulties with technology but participants would recommend their use. Control group experienced some deterioration in their physical & cognitive health while the experimental group maintained theirs.	+
van der Lende 2016 The Netherlands	Quantitative	Residential care unit for individuals with refractory epilepsy & severe learning disabilities	Video monitoring, acoustic detection systems & bed motion sensors	Video monitoring particularly helpful for detection of tonic seizures, seizures late in the evening/early morning & facilitate detection of seizures requiring intervention. Costs are high, need for development of reliable seizure detection devices.	+
Wigg 2010 USA	Qualitative Observation	Dementia care facilities	Surveillance technologies	2 contrasting dementia care facilities. Wandering should be de-medicalised within facilities & seen as a therapeutic approach. Surveillance technologies could support this instead of secured locked doors etc.	-
Zwijsen 2012 The Netherlands	Qualitative Semi-structured interviews & focus groups	Care professionals from 7 seven dementia nursing homes (*N* =9)	Surveillance vs physical restraint	Dementia care professionals consider surveillance technology supplemental to physical restraints, rather than as an alternative.	+

Key themes

As most of the studies were qualitative in design, we have conducted a narrative analysis of the data to highlight some of the key findings drawn from across the range of studies.



Tension between the needs of residents, their family members and those providing care

There are conflicting needs in the provision of care. This includes residents that wish to maintain some level of autonomy and control, family members that want to know about the care and wellbeing of their relative and finally, the pressures associated with providing quality but efficient care by both staff and the management of facilities. A number of the studies reflected on these tensions between these stakeholders.

In Berridge's 2016 anonymous online survey of nursing home and assisted living facility staff 30% of institutions allowed family members to independently install cameras to monitor their relative's care. Asked to identify the advantages and disadvantages of CCTV, over 60% more disadvantages were identified by staff than perceived advantages of its use. These related to invasion of physical and emotional privacy (roommates, staff and visitors) impact on dignity particularly relating to intimate care, the institutionalisation of care and the negative impact it had on staff. Very few people identified benefits for family members and Berridge concludes that the advantages for facility management may be higher than any other stakeholders, characteristic of 'an expansion of facility-focused development and away from a family-friendly approach'.

The importance of maintaining autonomy was identified by Böstrom and colleagues' Swedish study (Boström, Kjellström et al. 2013). They used five focus group interviews to explore the use of monitoring technology. Participants identified an overarching theme of 'maintaining a sense of self', articulated as a desire to maintain control of their lives for as long as possible. Similarly, Essén's

interviews with older people experiencing electronic care surveillance perceived it as freeing and something which protected their privacy by helping to protect and extend independent living (Essén 2008). Essén describes the importance of participants' agency and choice when being monitored; this dual role of surveillance helps to tackle concerns around liberty and privacy. Godwin's qualitative interviews with people with dementia (Godwin 2012), their family members and carers in a range of home settings (residential care, supported living, living alone or with a partner) explored the ethical considerations of assistive technologies (AT) and developed an ethical checklist for professionals considering AT to support people. The demands of safety, efficiency and cost cannot not override the wellbeing of people with dementia and their carers and the use of AT can increase the potential for abuse through the reduction or withdrawal of care and social interactions.

Relationship-based care, cultural change and the institutionalisation of care settings

One of the key tensions identified related to the importance of providing a 'home like' setting for residents and prioritising relationship-based care. This was considered to be an important aspect of care and the use of cameras could potentially jeopardise this relationship. The very nature of CCTV undermines a home-like experience by institutionalising it; one administrator in Berridge's online survey explained, "Installation of a camera recording the most private spaces is the very definition of institutionalization." (Berridge, 2019, p.3). We should be mindful that nursing and care homes are often very safe places, they are highly regulated and face considerable liability should any maltreatment be exposed.

CCTV has been used to monitor activities to assess and improve care. One reported analysis of CCTV footage to assess the nature of falls within elderly care (Robinovitch, Feldman et al. 2013)identified shortfalls in the design of spaces and furniture that created fall hazards for residents. The design and look of care homes can influence wellbeing. Importance is often placed on the design of 'home-life' living conditions and creating these conditions is connected to a relational model of care which replicates community-based living supported by a person's social networks. The additional drawbacks of institutional space are explored by Wigg (2010). He conducted an ethnographic study drawing on his experience as care worker in two different settings in the USA. He compared observational data collected over ten years in one workplace and 400 hours of detailed observation over 7 months in a second care home for people with dementia. The two facilities varied greatly in size and layout. The larger scheme had a continuous walking loop around the perimeter of the living and dining spaces but the unit was locked with key pads between doors and access to the outside space. The other unit was designed for a smaller number of people and motion sensor technology was relied on to alert staff when someone entered or exited the reception space. Wigg argues that 'wandering', a typical characteristic in dementia, should be de-medicalised. Surveillance technologies such as locked doors can dehumanise and frighten individuals. Less restrictive technologies such as motion sensors may offer quality of life and health benefits to allow people to wander safely, "Instead of pathologising wandering as a component of the biomedicalisation of dementia, redefining wandering as purposeful and therapeutic in long-term dementia care may create more elder-friendly environments of care that focus on the needs of the individuals who wander." (Wigg 2010; p.299)

Similarly, technology used to track and monitor staff behaviour can negatively impact the relationship model of care. The technology described in Brown's research was perceived as a barrier to care, increased the impersonality of care and 'ruptured relationships' (Brown 2010). When carers arrived at the house, the system required them to phone to 'check in', in reality this led to picking up the phone to check in because of the time pressures instead of greeting their patient as first priority. Some of the studies suggested that culture change within organisations need improvements to promote this model of care. Berridge concludes that culture change is more appropriate than surveillance for supporting care and safeguard individuals and resident-directed care and joint decision-making can play a part in promoting change.

Technology that allows people to stay longer in their homes and delaying a move to residential care was also explored by a number of studies. 'Age in place' care was facilitated by the use of home based monitoring technology and residents particularly valued the digital link it created with family and other people involved in their care. Bradford's pilot system involved a video conferencing facility using an iPad app and residents valued this connection with family and friends, and felt cared for (Bradford 2018). However, Berridge describes the 'strategic misuse' of technology by residents, the system enabled them to chat to employees and this contact with the outside world helped to reduce their social isolation. Only one RCT (Tomita 2007) was included in the review and it was conducted over two years to test the feasibility and effectiveness of smart home technology for home-based frail elderly people who lived alone. The treatment group (N = 46) were provided with internet access and smart home technology. The experimental group participants reported positive experiences of using it and maintained their

physical and cognitive status whereas the control group (*N* = 67) declined significantly in both areas.

Improving care

In a similar vein, Eyers and colleagues (2013) looked at ways to reduce the level of disturbance associated with the routine night time checks conducted in care homes. Care-giving at night can be disruptive and can disorder important sleep that plays a key role in maintaining physical health. Night-time checks can occur every 2-3 hours, and may involve physically checking that the bed is dry or a patient's vital signs (breathing, pulse etc.). It inevitably involves some additional light in the room and this along with physical movement can disturb sleep. Some staff felt that night time noise was reassuring to residents but accepted that it could be disruptive. Many of these checks could be done remotely using technology, but staff were overwhelmingly in support of continuing regular checks even if they had remote systems. This suggests that staff believe their own senses to be more reliable than technology but this focus may have the unintended consequence of disrupting the quality of sleep needed for good physical and mental health. Many of the nurse call systems used within care facilities are noisy, with a constant buzzing or ringing noise – quieter alternatives could be explored. Eyers concludes that night-time care could be improved for residents by technology but there is a reluctance to rely on it. Improving sleep could improve residents' wellbeing.

Night-time monitoring systems were also used to improve care in an adolescent residential treatment centre for young people who had experienced abuse and trauma (Hill 2012). This investigation was designed to assess the effectiveness of a Safety Camera System (SCS), using staff to watch video cameras remotely,

compared to Overnight Awake Staff (OAS), in monitoring the night time activities of children with histories of trauma, behaviour problems, and sexualised behaviour. Video camera observation (with audio and motion detectors) was compared to overnight awake staff's ability to detect night awake activity. Video observation by security staff detected a total of 459 risky activities compared to 6 detected by overnight awake staff. The use of surveillance technology is preferable to night awake staff for many reasons, improving the safety of children and the reduction of staff transitions for children in residence. The SCS was designed to eliminate the need for overnight awake staff. Data were collected in 3 cottages over 6 weeks on 7 female (mean age 13.5 years) and 7 male participants (mean age 15.4 years). Video cameras were mounted in each child's room along with motion and audio detectors and equipped with infrared tech to monitor night time activity. Data was recorded between 10pm and 6am each day. Children reported anecdotally that the cameras added a sense of security and felt safe that an intruder would be detected. Sleep was improved in both children and staff.

Surveillance technology as an alternative to restraint use was examined in te Boekhorst and colleagues' Dutch study (te Boekhorst, Depla, Francke et al., 2013). Quality of Life was assessed longitudinally in 6 psychogeriatric nursing homes with surveillance technology (n=170) and residents with physical restraints (n=22). Analysis found that those residents subject to surveillance had more positive Quality of Life than those physically restrained but controlling for confounders this was not associated with use of surveillance. The small sample size available for the comparison of the measure of Activities of Daily Living make it difficult to generalise any findings and have confidence in the findings.

The professionals interviewed in Zwijsen's qualitative study (2012) also considered surveillance compared to traditional restraint. Surveillance tools could be administered universally where benefits were identified in individual cases. One of the professionals characterised this as "*creeping in. Those things are always on, even when they're not needed*" (p. 5). Surveillance also had clear limitations when concerned with improving care. Sensors were the most used surveillance technology within the seven dementia nursing homes in the study and while a sensor may register a fall, it does not prevent it nor can it guarantee quick help. Nursing staff also complained that the technology did not always work properly or could be manipulated to do something else – one of the examples given was the use of 'tags' to grant access to certain areas of the nursing home. Residents bypassed this system by walking through door entry systems together (where one had a tag with access, and another didn't have). Technology that supports residents' freedom was welcomed but staff were not confident that they could rely on the technology, staff complained about the vulnerability of devices which could break down easily or were too sensitive to be relied on (Zwijsen, Depla et al. 2012).

Creating a culture of mistrust, the negative impact on staff

Berridge's survey of American healthcare workers identified the negative impact surveillance could have on staff, with its potential to 'demoralise, offend, stress, add pressure, intimidate and show lack of confidence in staff' that contributed to a culture of mistrust. This was to the extent that staff and residents could feel under considerable scrutiny, leading to mistakes in care being made.
Berridge describes this as reduced fiduciary [trusting] responsibility and the surveillance of staff can send a strong message that they are not trusted.

However, he reminds us that this is not grounds to remove monitoring staff and that surveillance is never more denigrating than being subject to abuse. Another important consideration is the context of the job of the nurse or care worker. It can be very challenging work, often low paid, with a high rate of injury and staff turnover which in turn negatively impacts on staff levels and workloads.

Brown's survey of healthcare workers in England investigated the use of tracking technology to monitor staff performance and efficiency to meet home visits targets of 15 minute duration. Staff perceived it as primarily controlling, 'big brother' and a lack of trust. The increase time pressure to deliver quality care within a set time frame had a negative impact on staff, "I love my job but would rather be an ordinary carer who did not have to watch the clock" (p. 423).

Staff interviewed in Hall and colleagues study (Hall et al., 2017, 2019) were fearful that they would be held responsible if accidents/injuries occurred even where there was no reports of this happening. "The spectre of a blame culture was most apparent at [care home], where the managers had justified implementation of the door-monitoring technology out of fears influenced by media portrayals of care homes." (p.67). There was an expressed need for training on the benefits of technology - lack of consistent understanding of staff about what these were, also lack of trust that it would be used to monitor staff. One home did use it for this purpose, there "seemed to be a lingering mistrust between staff and management." (p.68). Staff were also susceptible to rumours of this, even if this wasn't the case.

Data security

Fear of how the data could be used or manipulated was a concern for staff; examples included the editing feeds to support litigation, vulnerability to hacking and public posting of footage as a form of abuse.

Accountability

Even though the majority of respondents in Berridge's online survey of healthcare workers saw surveillance as negative, others thought that CCTV could make staff more responsible, accountable and supported. They also reported the use of CCTV as a quality control tool and a way of 'keeping staff on their toes', making sure no short cuts were made in the quality of care. In contrast, Brown's 2010 research surveyed frontline employees of local government care providers in England using scheduling and monitoring tracking technology for home care workers across 3 different sites. They used regression analysis to consider two dependable variables: organisational commitment (I share many of the values of my organisation, I feel loyal to my organisation, I am proud to tell people who I work for); and discretionary effort (do you go beyond the scope of duties where necessary, put in extra effort, do more than an acceptable level). N=266 usable questionnaires were returned, representing a 99% female response rate, 72% were aged between 40-59 years. The monitoring system that tracked staff was seen as increasing levels of control and reducing their hours as a result.

Identifying and monitoring health behaviours

Most of the Smart Home technologies that have relevance for a care home setting involve the monitoring of bio-behaviour, alarms are triggered when deviations

from normal behaviour or vital signs are identified. Four studies explored the benefits of these systems using a qualitative methodology and a fifth study involved an RCT to compare smart home technology compared to no treatment control.

The benefits of health behaviour detection was also valued e.g. detecting, documenting and explaining falls, detection of unknown behaviours (sneaking food, sleep habits) (Berridge 2019).

Study of CCTV footage has been useful to identify falls and deterioration of gait as an important indicator in physical decline. A Canadian study reported in the Lancet monitored 227 falls over a 30-year period in two care homes (Robinovitch 2012). They discovered that 41% of falls are caused by shifts in body weight, often caused by poor ergonomic design. This demonstrates the facility that CCTV monitoring can play in health prevention. Three other studies considered the potential that CCTV can have in identifying and monitoring health behaviours. A study conducted by researchers in the Netherlands examined video technology to develop a very successful non-contact seizure detection algorithm in residential care for patients with nocturnal convulsive epilepsy (Geertsema 2017). A second Dutch study (van der Lende et al., 2016) looked at the efficacy of video monitoring to identify seizures that required clinical intervention in a residential setting for people with refractory epilepsy and severe learning disabilities. They concluded that video monitoring was more effective at detection than acoustic detection systems or bed motion sensors however; the high cost of the technology identified the need for more reliable seizure detection devices to be developed. The third study, although not set within a care home, demonstrated the utility of video-based interventions in a spinal unit in an Australian hospital. Clinicians under

video surveillance increased mutual attentiveness and improved self-care and care for others (Iedema 2010), whether this is replicated in other more relevant clinical settings is unclear.

Utility as a crime solving tool

Two studies identified the potential for CCTV as a tool for solving criminal activity or disputes. Care workers saw CCTV as beneficial to determine truth about abuse or theft within residential settings but cautioned the routine examination of footage and should only be used to help investigations. We also included Ashby's secondary data analysis of 251,195 crimes reported by the British Transport Police. CCTV was available in 45% of crimes, and judged to be useful in 29%. Images more likely to be available in more serious crimes. The availability of CCTV significantly increased the chances of crimes being solved (except for concealed crimes such as possession of drugs or weapons and fraud). While CCTV is used for purposes of public safety, it also plays an important role in investigating complaints against facility staff (National Rail CCTV Steering Group 2010). It may be useful in establishing what has happened, who was involved and can be used to corroborate or refute other evidence (La Vigne 2011, Lesley & Martin 2005). Other research has looked at CCTV's effectiveness in crime prevention and the evidence is conflicting: it can prevent crime in public spaces such as car parks (Poyner & Webb 1987; Tilley 1993), but has little effect in residential areas (Gill & Spriggs 2005). Welsh & Farrington's systematic review identified 41 studies and concluded that while it may be effective in reducing crimes in some circumstances its impact may be more limited than the extensive deployment would suggest.

Consent and capacity

Obtaining consent under these conditions is a complex ethical area, as one respondent in Berridge's 2019 study highlights, "We live in an era in which bioethics too readily collapses respect for person into respect for autonomy, which leaves out what we owe people who lack autonomy." (p.5). Niemeijer also explores the complexity of consent with people with dementia and intellectual disability (ID) particularly with monitoring devices that are visible on the person (e.g. electronic bracelets) and could be stigmatising. Some clients in the two facilities where ethnographic field work was conducted were unaware that it was the bracelet that was opening doors for them or indeed that they were wearing a bracelet at all. Other technology that may be embedded within clothing (GPS tags) or unobtrusive motion or audio surveillance sensors also challenge the issue of consent for those with diminished capacity and the autonomy argument. The authors conclude that assistive technology must be assessed on an individual level and encourage staff to support and give meaning to technology for people with dementia and ID.

The importance of consulting with all stakeholders

Hall used an embedded multiple case study design in care homes in the UK to explore the facilitators and barriers to the implementation of monitoring technologies in care. Semi-structured interviews (purposive sample of N=24 staff - nurses, clinical specialists, senior managers and care workers; N=9 relatives and N=9 residents), observation, resident care record review, examination of organisational documentation and the technical manufacturing literature Some staff, relatives and residents weren't involved in the decision-making which seemed to limit their understanding about the benefits and challenges of

technology. Greater involvement of stakeholders could further facilitate implementation. Technology generated frequent alarms that placed a burden on staff but some were able to use their contextual knowledge to counteract this. One of the care homes frequently reviewed residents need for monitoring and withdrew it if they felt it was no longer needed. Using a sociological framework of trust (Misztal 1996) to analyse qualitative data, Lie and colleagues explored the concept of trust with passive monitoring system and concluded that the trust and establishing new systems within existing regimes, habits and routines would inform the intelligence of the system and encourage its use.

Mulvenna and colleagues held two workshops facilitated by Age NI with people with dementia and their carers in two locations in Northern Ireland to explore the concept of camera technology deployed within the home to extending care at home and delay residential care (Mulvenna, 2017). Participants were supportive of the idea, they thought they would be easy to use and conceived no barriers to sharing the data to other family members. Mulvenna demonstrates how these types of workshops could improve the design and implementation processes for solutions such as video surveillance by promoting the voices of the people living with dementia and their caregivers.

Gibson's qualitative interviews (Gibson, 2019) with people with dementia and family carers highlighted the significant role that family members play in facilitating the use of assistive technologies, she describes the 'bricolage' approach to adapting existing technology to meet the needs of a relative. Often, family carers were instrumental in adjusting household technology that could be bought off the shelf. Adaptations made it user friendly however, barriers were faced from healthcare providers who did not routinely support its use. Lie and

colleagues conducted qualitative interviews with older people during a field trial of a passive monitoring system and also highlighted the importance of a family/friend monitor in making the technology work for the individual family member living at home (Lie et al., 2015).

Cost effectiveness

One study based on two RCTS considered the economic benefits of general tele-monitoring and telehealth and not CCTV specifically (Henderson, 2018). The results suggest that these technological interventions did not produce the hoped-for improvements in self-reported quality of life and other psychosocial outcomes, nor reduce the overall estimated annual costs of health and social care. Policymakers and practitioners would benefit from better evidence on the mechanisms by which telecare and telehealth 'work', and for whom, to direct future investments of resources into these technologies.

"Surveillance Technology is not something that should be applied collectively- for example, 'equip every room with a sensor and, while it is there, we might as well turn it on'. Rather, technology should be suited and catered to each individual, with his or her specific needs."
(Niemeijer, 2011, p. 306)

"What does a better culture for relational care look like? … empowerment of staff, resident-directed care and activities, decentralized decision making, and design of homelike living environments."
(Berridge, 2019, p. 60)

"Many of the residents have dementia, so how do we ascertain if this is what they would want or not want? Does the family have the right to insist? The resident's dignity may be violated by their own family."
Staff member (Berridge, 2019, p. 57)

"You have to offer respect to staff. If these staff don't respect themselves and are devalued as human beings, then how can they deliver sensitive care?"
RCN professional lead for the care of older people Dawne Garrett (Duffin, 2014, p. 8)

"The review has found no evidence that camera surveillance contributes to functional performance gains, increased independence or positive quality of life impacts. There is the possibility that surveillance may reduce costs associated with reduced staffing levels which may have a number of unintended consequences including reduced therapeutic touch and increased physical restraint."
(Hayward, 2017, p. 129)

"Installation of a camera recording the most private spaces is the very definition of institutionalization."
(Berridge, 2019, p. 57)

Implications of the current debates and evidence for law, policy, service provision and practice in Northern Ireland

Based on the rapid evidence assessment there is insufficient research evidence to support the proposal to use CCTV in care home settings. There are a range of complex debates involved which do also need to be considered and addressed but the available research evidence does not support its use. As is often pointed out, some interventions are difficult to research and the absence of the highest standard of evidence for effectiveness does not necessarily entail that the relevant intervention is not effective. An example is that the lack of evidence from randomised controlled trials of parachute interventions does not mean that most people would decline one when jumping out of an aeroplane (Smith and Pell, 2003). On the other hand, the ongoing process of questioning and researching effectiveness is important for, as Sheldon and Chivers (2000, p. 2) have highlighted, "It is perfectly possible for the good-hearted, well-meaning, reasonably clever, appropriately qualified, hard-working staff, employing the most promising contemporary approaches available to them, to make no difference at all to or even on occasion to worsen the condition of those whom they seek to assist." It is challenging, but certainly possible, to design high quality research that would explore the effectiveness of CCTV in care home settings and the current debate in Northern Ireland may support the case for conducting such research in this context. Even if it is possible to provide convincing evidence for the effectiveness of CCTV in care home settings for achieving specific outcomes it is also necessary to establish that this is more effective than alternative, and perhaps less intrusive, methods of achieving these outcomes.

The importance of considering the available evidence is perhaps heightened when the issues involved are complex and emotive. There are a number of aspects of the potential debates which are important to keep in mind. There is little debate about the importance of promoting the quality of care, and of

preventing the abuse of people, in care home settings, and this report has focused on one aspect of the more complex question of how that can be best achieved for all people across all care home settings. The relevant debates also involve the balancing of complex issues, such as autonomy/privacy and protection or benefits and harms, and these may vary greatly across individuals within settings and across settings. It should also be acknowledged that CCTV may be used in a wide variety of ways for a number of purposes and is only one of an array of technologies that have the potential to contribute to the care and support of people in care home settings. There may also be related debates about the use of other forms of technology and there uses, in which people in care home settings are observed and monitored. Some caution is also needed when interpreting the implications of the role of CCTV in the recent high profile cases in England and Northern Ireland. In these cases concerns about care were not initially raised as a result of the use of CCTV although the subsequent CCTV footage may then have provided relevant evidence and, in the case of Muckamore, identified further concerns.

Although the main focus of the report is on the available research evidence of effectiveness the relevant legal issues (especially regarding data and covert surveillance) are also important. If CCTV is proposed, as the current policies and guidance highlight, consultation, consent and best interests are central considerations. In Northern Ireland, the partial implementation of the Mental Capacity Act (Northern Ireland) 2016 helps to structure the considerations that must be included but it is also already the case, under common law, that when a person is unable to make the relevant decision, the proposed intervention must be in their best interests. Establishing whether the use of CCTV is in a person's best interests requires a process of consultation and consideration of the issues,

including the research evidence for whether the use of CCTV would be the most effective and acceptable method to achieve the relevant intended outcome/s.

It is also important to consider the practical complexities of installing, operating and monitoring CCTV and whether investment in CCTV is the best use of limited resources. Again, the research evidence does not provide definitive answers to these wider resource prioritisation questions but they should be considered as part of the ongoing discussions.

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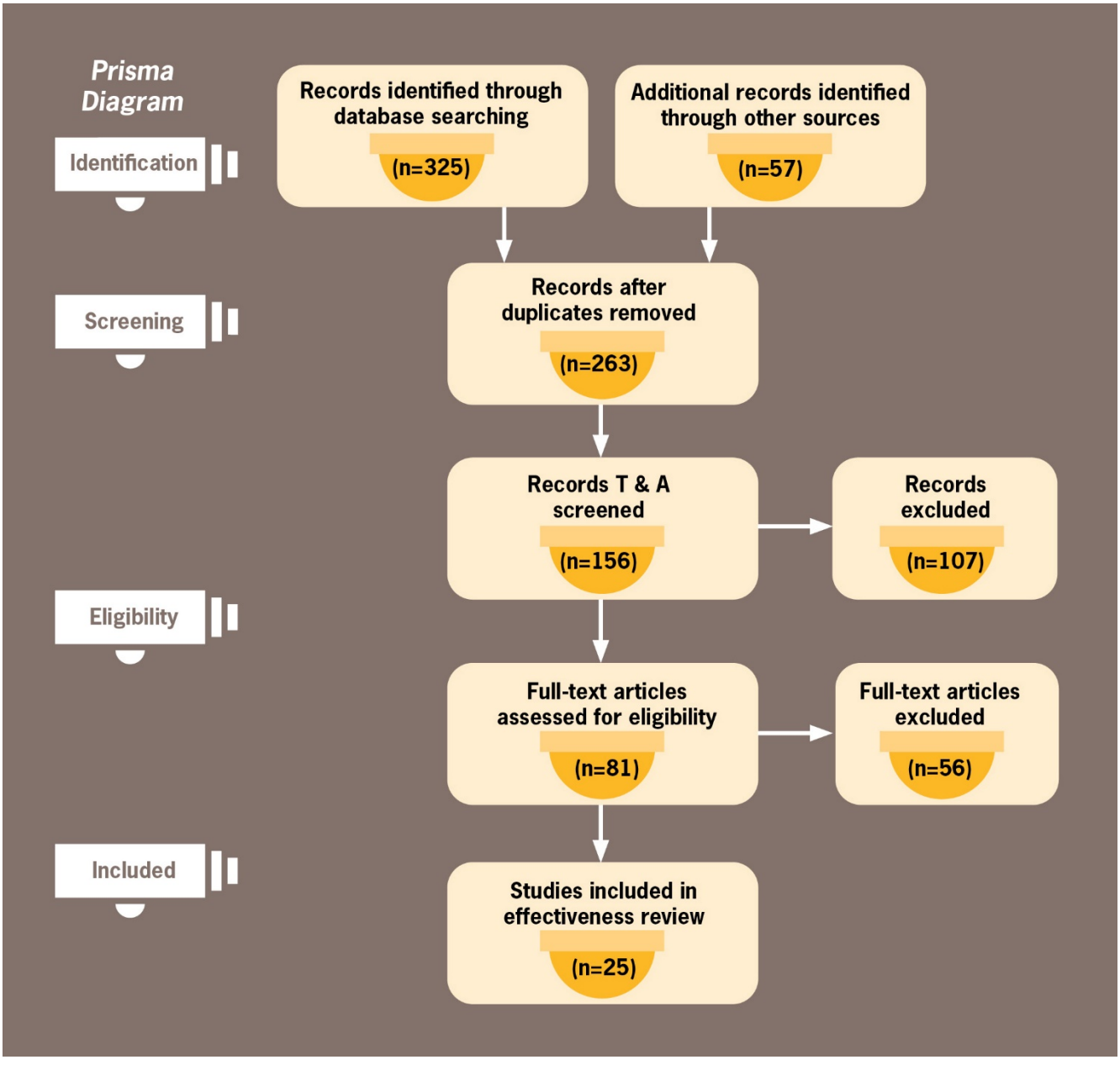
Appendix One: Prisma Diagram



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