

**RESEARCH ON THE USE OF TECHNOLOGY
IN THE MODERN HEALTHCARE WORKPLACE:
CARE HOMES**

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**CERT HE SKILLS FOR THE WORKPLACE
HEALTH AND SOCIAL CARE**

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TECHNOLOGY IN CARE HOMES

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Introduction

The healthcare model is undergoing a deep transformation, and this evolution has been accelerated even more by the COVID-19 pandemic. Nursing homes and care homes are facing a great challenge responding effectively and promptly to the growing welfare needs of their residents, ensuring their psychological wellbeing, respecting their dignity, and protecting their bond with the family.

The availability of new technological solutions in particular for monitoring guests represents a fantastic opportunity for the social and health sector to improve the quality of the service provided to optimize the resources available to increase safety to improve the quality of the staff workers and quality of the resident's life.

Technology available in the care sector

- Artificial intelligence
- Smart home technology integration
- Thermostats
- Smart devices
- Robotics

Artificial Intelligence (AI)

Across the UK's care homes, Artificial Intelligence has been introduced already years ago, before the pandemic, to monitor all they residents and predict any intervention when needed. The tools utilized from AI can individualize and track behaviour change in real time and permit to the care workers to operate and communicate. This innovation is completely transforming the care delivery and giving less pressure on carers and family shoulders. (Campbell, 2019)

The use of AI can provide automatic reminders, identify people at high risk, and deliver personalized dosage recommendation.

Smart home technology integration

This kind of technology was already in use since early 2000s in domestic homes and has now been introduced also in care homes. The automatization of most of the daily tasks give to caregivers less stress and provide the residents wellbeing. Also, in terms of saving time and money. (Campbell, 2019)

Thermostats

The use of thermostats technology in care homes is a tool to ensure all the rooms and communal areas are well heated and both residents and care worker are in a safe and comfortable environment. There is also the possibility to lock all the devices in the single rooms to avoid unwanted change. (Campbell,2019)

Smart devices

Smart devices such as smart phones or tablets are in use in the care homes residents and care workers for entertainment and communication with families. This kind of technology is also useful for the staff to monitor residents' health and access to medical records using specific apps such as mHealthapp for example. (Campbell, 2019).

In this stoical period of COVID-19 pandemic the communication with families has been difficult so, having the possibility to talk and video chat from care homes residents and their family has been more important than usual.

A particular benefit with the use of smartphones and tablets has been individuated for residents with dementia which were more affected of lone less and disorientation when care homes must shut to public because of the lockdown.

Robotics

Of course, robots will never replace at all the job of a human care worker but could be a significant help to support and supplement the front-line workers in their daily tasks. The COVID-19 pandemic has increased the use of Service Robots in the healthcare sector providing the minimisation of human contact especially for those having contracted the virus and protecting care workers on the front line.

But the use of Service Robots unable to provide efficient and personalized care and they are in use for elderly care since years before the COVID-19 started. (Ozturcan,Merdin-Uygur, 2021)

Supporting people with dementia

Past

People with dementia living in care or nursing homes can benefit from the use of technology in their life in many ways. Technological care homes can really improve both the life of residents and care worker using software to take notes in real time of every information related to every single person and care provided instead to handwrite all this information on paper records at the end of the shift, this system allow the care workers and manager to improve the care and also create a gateway from residents and their families , relatives are able to access logging in this software and read in real time every information's about their loved ones.

The digital records hold in this software enable also managers and front-line staff to communicate and analyse information such as about medication taken for instance or check falls and incidents.

Another clever and useful kind of technology is the installation of acoustic devices in the residents' single rooms, with the knowledge and agreement of the person of course, to be used especially in the night-time to monitor the sleeping of people and control every movement or noises from the staff room instead to patrol every hour the rooms and disturb the elderly sleeping.

“The data collected should be used creatively and cleverly to maximise potential of the system.” (Social Care Institute for Excellence, 2017) with this pattern of information is possible to create individuals' full pictures of their needs, such as change in mobility, use of the toilet, sleeping, and blood pressure and heart rate.

Present

The pandemic has put care homes residents and care workers in the position to shield themselves. External visitors were not allowed to enter the care homes to avoid infections. Digital technology is giving the possibility to care home residents to be checked and assessed avoiding physical contact where not needed. Nurses and care workers can take every vital sign of the residents and communicate with their GP practice in real time and connect with them in video call. Monitoring care home residents in this technological way allows GP to triage patients and intervene when needed; is a virtual ward where patients are supported without going in hospital. This emergency model of care allows prompt intervention and avoid not necessary hospitalisation protecting both the vulnerable and the NHS staff (Barker, 2020)

Surveillance technology

Different kind of assistive technology were and are in use in care homes such as walking frames, standing hoists, bed sensors, call systems. And all these kinds of surveillance are defined with the term monitoring, but what about monitoring the inside of a care home by cameras? Is it correct? Is it useful? Is it a privacy abuse?

The Care Quality Commission (CQC), the independent regulator of health and social care, advise that: “the use of cameras should accord with data protection requirements and take place following legal advice” (Care Quality commission, 2014)

The UK government has recognized that the use of hidden cameras in care homes has helped to expose many cases of abuse and neglect. Every care home should ask consent from residents and families.

A BBC broadcast in April 2014 called “*Behind closed doors: elderly care exposed*” has uncovered and reported evidence of abuse on elderly residents in different care homes across England. Same in other countries across the world have considered the use of hidden cameras to minimise the abuse on vulnerable people and ensure their wellbeing. The United States for example, in July 2011 the National Centre of Elderly abuse issued a bulletin saying that cameras in care homes can be a way individualize in care homes the presence capable guardians. In Italy as well the Ministry of Interior has approved the financing of video surveillance systems to install in care homes and nursing home after the report of evidence of abuse by cameras in a program called “Le lene” in 2019.

The European Commission had also expressed itself in the past about use of cameras deeming it legitimate “as long as it respects the principles of data protection”.

HC-One consultation and GBM Union survey

HC-One, one of the most important care home providers in United Kingdom, they manage more then 200 care homes all over the country, has overtaken a consultation about the use of cameras as a tool to safeguard the residents asking to more than 12,000 people between staff, residents, and family members. (HC-One, 2014)

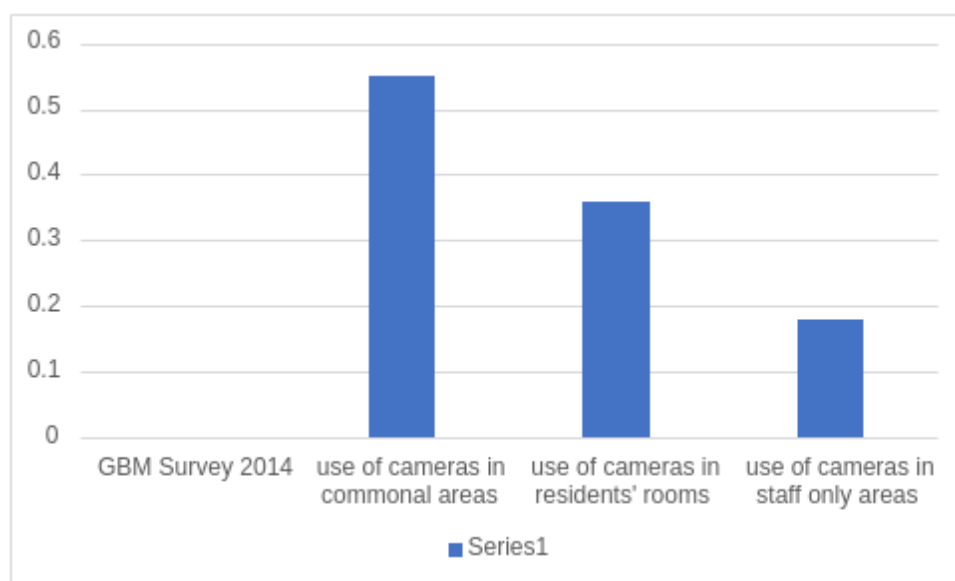
They interviewed 12,237 people divided into:

- 1536 residents
- 3371 family members
- 7330 staff members

The result of this consultation is reported in the table below

QUESTIONS	TOTAL VALID RESPONSES	RESIDENTS	FAMILY MEMBERS	STAFF
	12237	1536	3371	7330
Would you like HC-One to offer residents and relatives an opt-in scheme for visible cameras in ours homes?	68% YES	47% YES	87% YES	63% YES
Do you think cameras should be placed in communal areas as well as bedrooms?	51% YES	41% YES	79% YES	26% YES

Another interesting outcome is from GMB Union survey, regarding cameras location. On a sample of 2164 responses, the percentage supporting them in communal areas is 55%, a 36% in resident's rooms and only the 18% agree with cameras in staff only areas. (GBM survey,2014).



The questions in the GMB survey were more specific and are reported in the table below.

	YES	NO	NOT SURE
I am relaxed about visible cameras being installed in care homes	42%	36%	22%
Cameras should only be introduced with the consent and knowledge of the residents and/or their families	79%	15%	6%
Visible cameras could help to identify and prevent abuse	70%	15%	15%
Visible cameras could help to protect staff against allegation	78%	13%	9%
There would need to be clear rules about how footage of the cameras is used	92%	5%	4%
Cameras should only be used in homes where inspectors have identified problems	34%	44%	22%
Footage should only be looked at when a complaint has been made	57%	24%	19%
Only inspectors should be able to access the footage	38%	42%	20%
Cameras do not tell the whole story. Diligent care requires enough staff and proper training	87%	8%	6%

Seven principals

In order to respond to the concerns of the Care Quality Commission these seven principals must be considered for the use of surveillance technology in care homes:

1. **Any reasonable level of surveillance is appropriate for common or public areas in care homes.** The surveillance, including cameras, must be overt and the care home must be clear in the acceptance from residents, family members and staff of the home.
2. **Care homes should be able to provide or should be willing to permit or facilitate the use of surveillance technologies within a resident's room or other private areas.** The consent from the residents and/or their relatives must be written in the agreement between them at the entrance in the care home.
3. **The location of surveillance technologies should be carefully considered, they should be visible or otherwise clearly known to be present.** Cameras and any other surveillance technology must be visible or clearly pointed and the light must be appropriate to consent the effective use.
4. **Staff should be fully aware of their responsibility in relation to surveillance technologies.** It must be written in their contracts and be clear about the use of surveillance tech also to demonstrate the good and effective care provided.
5. **Access to data, images, audio, or video footage should be restricted only to authorized persons or agencies in particular and defined circumstances.** The access to the images or recorded audio can be visible for investigating purpose only from authorised persons and legal authorities.

6. **Ownership of data, images, audio, or video footage.** All these information is gathered only for the wellbeing of the residents and them and their families are the owners of these data.
7. **Minimising intrusion.** The surveillance tech must not to exceed on the privacy of the individuals. (Fisk, 2015)

Importance of technology during COVID-19 pandemic

The use of technology inside care homes is a fact already before the pandemic but in the last year and a half it has helped in many ways to keep care homes residents protected and in the same way connected with their families. From 23rd of March 2020, since the lockdown started for the first time, care homes were closed to the public to protect their residents. But in the other hand these people were suffering of this condition of not to be able to meet and stay with their loved ones.

Many care workers were staying in the care homes as well to protect themselves and the residents from the spread of the virus.

The only connection with the world outside has been by videocall and it has been particularly important to the mental wellbeing of everybody.

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