



**CASTLEBRIDGE**

Changing how people think about information

## **Guidance on Temperature Scans in the Workplace**

## Version Control

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# Introduction

With the time nationally spent in lockdown increasing, it appears that an end is in sight and talk is gradually edging towards asking what will post-Covid 19 lockdown look like? Talk of a “new normal” influenced by the pandemic raises many questions. Much attention focuses on how individuals returning to work will be able to do so safely. We can wear facemasks, be socially distant as far as possible and even be alerted when we show specific covid-19 symptoms- in this case a high temperature.

The advent of new technology, including Thermal Infrared Cameras, have their role to play in ensuring the safety of people returning work. However, as is the case with any new technology reaching the public, the legality, practicality, sustainability, and utility of the technology must be assessed.

One of the common symptoms someone with Covid-19 will display is a high temperature. The scanners, which can capture a temperature recording and photo, will be able to aid in tracing individuals when there is an alert to a high temperature reading. Questions this report will cover include asking the practical questions such as what will the temperature readings tell us? Will they be effective in promoting people’s safety? How will the temperature reading be processed legally in line with the GDPR? And practically who will take the readings and where?

# Public Interest and Health Advice

The use of temperature screening as a visible effort to identify people who may potentially be infected with COVID-19 has attracted significant attention and debate as to its usefulness and effectiveness as a risk assessment and mitigation measure. While in some cases the technology has been enthusiastically adopted as a safety measure, it has also been criticised as “notoriously inaccurate” and an ineffective measure.<sup>1</sup>

On 25 March 2020, the World Health Organisation (WHO) made explicit mention of checking body temperatures of employees daily as one of a number of measure which could help prevent transmission of COVID-19 between employees and make workspaces safer.<sup>2</sup> Furthermore, the European Centre for Disease Control has referred to temperature checking in the context of screening at airports and states that:

*“There is evidence that checking people at the airport by reading their skin temperature (known as entry screening) is not very effective in preventing the spread of the virus, especially when people do not have symptoms.”*

A study published in Eurosurveillance on the effectiveness of airport screening estimated that over 40% of infected travellers would pass through undetected.<sup>3</sup>

In the Irish Context, temperature scanning is not a measure which the HSE has recommended. Chief Medical Officer Dr Tony Holohan in March of this year cited reasons including the failure of temperature testing as an effective measure in past outbreaks and the high percentage of false negatives which can be given through scanners.<sup>4</sup>

Dr Holohan’s comments bring to light overall concerns with the use of thermal scanners as a reliable instrument for combatting Covid-19 in the workspace. Temperature checking in general has limited value as an estimated 40% of Coronavirus carriers may be asymptomatic or able to transmit prior to the onset of symptoms according to the US’ Center for Disease Control and Prevention (CDC).<sup>5</sup> As such considerable false negatives may be expected. At the same time, temperature checks can give a high number of false positives. One's

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<sup>1</sup> <https://www.nytimes.com/2020/02/14/business/coronavirus-temperature-sensor-guns.html>

<sup>2</sup> [WHO Situation Report 65](#)

<sup>3</sup> [Quilty Billy J, Clifford Sam, CMMID nCoV working group2, Flasche Stefan, Eggo Rosalind M.](#) Effectiveness of airport screening at detecting travellers infected with novel coronavirus (2019-nCoV). [Euro Surveill.](#) 2020;25(5):pii=2000080. <https://doi.org/10.2807/1560-7917.ES.2020.25.5.2000080>

<sup>4</sup> <https://byrnewallace.com/news-and-recent-work/publications/temperature-testing-of-employees-a-hot-topic.html>

<sup>5</sup> <https://www.cdc.gov/coronavirus/2019-ncov/hcp/planning-scenarios.html>

temperature may be raised from numerous non-illness related causes including physical activity or may simply have a higher base temperature in general.

As such thermal scanners are best understood as a tool which may complement an overall public safety plan but can in no way replace a comprehensive plan.

## Summary of the Technology Environment

There are two main types of temperature measurement technology that have been described:

### **Infrared or thermal cameras**

Upon entering the workplace, hospital, airport, large factory, sporting venues and other areas likely to attract large numbers of people, individuals will pass by an electronic thermal infrared camera. The system will be able to scan 200 people at once.<sup>6</sup> Infrared or thermal cameras, produce color-coded images of a whole scene from several feet away showing the temperature of everything in view.<sup>7</sup>

The system can conduct temperature scans and take a photo of each individual so the person can be traced if there is an alert to a high temperature reading, a symptom of the virus. The photo is then deleted once the contact is traced.

### **Infrared thermometers (noncontact thermometers)**

Often shaped like ray guns, these thermometers read the temperature of a single spot on a person's skin.<sup>8</sup> They are usually aimed at the forehead from around 6 inches. Thus, they are usable only in very close contact with the subject.

However, many questions remain and must be addressed including: who provides the technology? Who runs the technology? Who owns the technology? How long will the technology be in use for?

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<sup>6</sup> <https://www.independent.ie/world-news/coronavirus/family-company-behind-ground-breaking-thermal-scanner-that-can-process-200-people-at-same-time-39202519.html>

<sup>7</sup> <https://www.wired.com/story/infrared-cameras-spot-fever-not-slow-covid-19/>

<sup>8</sup> <https://www.wired.com/story/infrared-cameras-spot-fever-not-slow-covid-19/>

# Summary of Legal Environment

If you are processing information that relates to an identified or identifiable individual, you need to comply with the GDPR and the Data Protection Act 2018. In this case individual's temperature and photograph are being captured and as such constitute personal information. Personal data that relates to health is increasingly sensitive and is classed as 'special category data'. Due to its sensitivity, health data has the protected status of 'special category data' under data protection law.

The Data Protection Commission (DPC) has issued guidance regarding the processing of special category data in response to Covid-19. In this guidance it has noted that applicable grounds include:

1. Article 9(2)(b) GDPR, where processing is necessary for the purposes of carrying out the obligations and exercising specific rights of the controller or of the data subject in the field of employment law, which in this instance would include the obligation to provide a safe place of work under the Safety, Health and Welfare at Work Act 2005; and
2. Article 9(2)(i) GDPR and section 53 of the Data Protection Act 2018, which allow processing where necessary for reasons of public interest in the area of public health. The Data Protection Commissioner has indicated that it is likely that these provisions would permit the processing of personal data (including health data) where organisations are acting on the guidance or direction of public health authorities.

In addition to these guidelines, the fundamental principles of Data Protection law remain applicable:

- 1) It must be fair, lawful, and transparent
- 2) It must be for a specified purpose
- 3) It must be adequate and limited to what is necessary for the purpose
- 4) The processing must allow for any errors or inaccuracy in the data to be corrected (accuracy principle)
- 5) Appropriate controls must be implemented to ensure the integrity and confidentiality of the data
- 6) Data should be retained for no longer than is necessary for this purpose

The organisation must also ensure that there are appropriate organisational and technical controls in place to ensure that the above principles are complied with (the Accountability Principle). Therefore, when selecting, configuring, and deploying Therma Infrared Cameras, organisations must ensure that appropriate consideration is given to these factors.

## Fair, Lawful, and Transparent

The transparency requirement under GDPR precludes the use of any covert monitoring technology. Organisations, employers, etc. must ensure that their staff, customers and clients are made aware of the use of and existence of any monitoring technologies in the organisation.

## Purpose Specification and Limitation

The implementation of remote monitoring tools for employees who are remote working needs to be for a specified purpose. Purposes which might be identified include:

- Detecting signs that the individual is COVID-19 positive.
- Detecting *who* it is that is showing symptoms.

Once having established the purposes for processing it is important to only collect and retain the [minimum amount of information](#) necessary to fulfil the stated purposes.

To abide by the data minimisation principle, it is necessary to ensure that the data collected is:

1. **Adequate** and sufficient to properly fulfil the stated purpose.
2. **Directly relevant** – has a rational link to that purpose; and
3. **limited to what is necessary** – no more no less than is needed to fulfil purpose,

In the context of test results, you need to ensure you do not collect unnecessary or excessive information from people. For example, you will only require information if the temperature of the individual is deemed in the high-risk zone- you will not need to collect data of temperatures lower than that. As an employer, you should be able to demonstrate the reason for testing individuals or obtaining the results from tests.

## Adequacy and Necessity

Employers have a duty to ensure that the Therma Infrared Cameras that they implement are adequate for the purposes identified, and that the processing is proportionate and necessary for that purpose.

## Accuracy

It is important that any tool accurately record data. Inaccurate data may result in unfair or harmful treatment of employees/ customers and clients. For example, this could be due to inaccurate information being recorded, or a failure to

acknowledge an individual's health status changing over time. Furthermore, it is necessary to acknowledge that people experience differences in their personal normal body temperature. Some people may show "symptoms" of COVID-19 through a high temperature but will not necessarily have the disease but rather will be exhibiting their proclivity towards a normally high body temperature. Furthermore, inaccuracies may occur if you measure the temperature as soon as people enter the work space, shop etc. since people's commute to work/the shop etc may affect their body temperature. For example, if the person has cycled, they may show a high temperature which will not be due to having COVID-19. Lastly, it would also not be fair practice to use, or retain, information collected about the number of staff who have reported symptoms of COVID-19 for purposes you have not directly stated or that would be not reasonably expected by the individuals in question.

## **Integrity and Confidentiality**

The issues of integrity and confidentiality of data arise from two perspectives when an organisation implements any form of automatic employee monitoring.

Consideration must be given not only to the security of the monitoring application however and should include consideration of how any downloaded images, videos, or other data that is captured through the monitoring is secured and protected from unauthorised or accidental access, alteration, deletion, or disclosure.

## **Storage Limitation**

GDPR requires that data is held for no longer than is necessary for the purpose for which it was originally obtained or as necessary for compatible purposes. In the context of remote monitoring, this requires the retention of any logged information to be retained only as long as is required for the associated payroll, performance management, or other defined purpose.

As such, employers would, at a minimum, need to ensure that any remote monitoring platform allowed for the retention of any recorded data after a user-defined period of time.

## **Employment Law Issues**

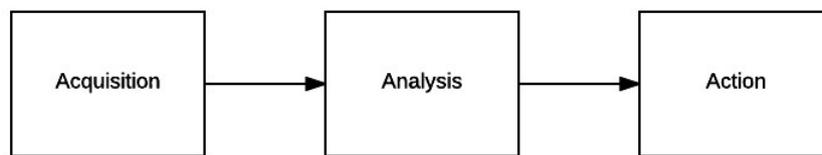
Issues relating to the right to work, the obligation to provide a safe workplace, the right to pay and nature of an enforced absence and recourse are important employment law issues which are directly affected by the use of temperature scanners. For example, questions such as what happens when an employee registers a high temperature? Should he/she be asked to go home? Are they then

on sick leave? Will they be paid in full? And as concerning: what should the employer do if an employee refuses to take the temperature test?

# Analysis of Approach

In this section we further divide the stages of processing data involved in this project. Analysis in this manner allows us to identify the exact stages where legal and ethical issues may arise and thus make more precise recommendations for remedial action.

Our analysis is carried out using a high-level information lifecycle model to categorise the purposes for processing within the end-to-end process. Specifically, three stages are identified (i) Acquisition of Data (ii) Analysis of Data (iii) Action taken based on analysis.



*Data Analytics lifecycle - source: "Ethical Data & Information Management", O'Keefe & O'Brien, Kogan Page 2018*

## Acquisition

At the acquisition stage of the data lifecycle a temperature has been taken of an entity. This temperature has not been connected to an individual. As such, no personal data has of yet been identified. The grounds for whom

The next stages of the data lifecycle will determine the ethical and legal standing of the project.

## Analysis

At the Analysis Level the temperature is tied to an individual. At this stage personal data is now present. The temperature of the individual can be measured against a benchmark of a "normal" body temperature. It is important to note that "normal" body temperature ranges have recently been challenged and updated.<sup>9</sup>

## Action

The chosen point of action will have far reaching legal and ethical ramifications. Two approaches may be identified for using Thermal scanners.

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<sup>99</sup> <https://www.bmj.com/content/359/bmj.j5468>

## Action Strategy A. Mandatory and Monitored Scanning.

A standard manner of processing would be to log the temperatures of employees as they enter the premises of their workspace. This monitoring would be mandatory and recorded for staff.

As noted above, due to its sensitive nature Health data is considered “special category” data under Article 9 of GDPR. A specific ground for processing under article 9 is required. The grounds for processing laid out are:

- (a) Explicit consent
- (b) Employment, social security and social protection law
- (c) Vital interests
- (d) Not-for-profit bodies
- (e) Made public by the data subject
- (f) Legal claims and judicial acts
- (g) Substantial public interest conditions
- (h) Health or social care
- (i) Public health
- (j) Archiving, research and statistics<sup>10</sup>

Consent may be an appropriate ground for processing in certain contexts. However, this does not apply to the workspace. In its May 2020 Guidance on Consent, the European Data Protection Board (EDPB) makes it clear that consent cannot be relied upon in employer/employee relationships as a significant power differential is present:

*“Given the dependency that results from the employer/employee relationship...Therefore, the EDPB deems it problematic for employers to process personal data of current or future employees on the basis of consent as it is unlikely to be freely given.”*

As the HSE is not recommending such technology at present relying upon public interest or vital interests will be more difficult to prove.

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<sup>10</sup> See more at <https://ico.org.uk/for-organisations/guide-to-data-protection/guide-to-the-general-data-protection-regulation-gdpr/lawful-basis-for-processing/special-category-data/>

The Information Commissioners Office of the UK maintains that the Employment Condition will be met in this case.<sup>11</sup> However it is not clear that this will be sufficient.

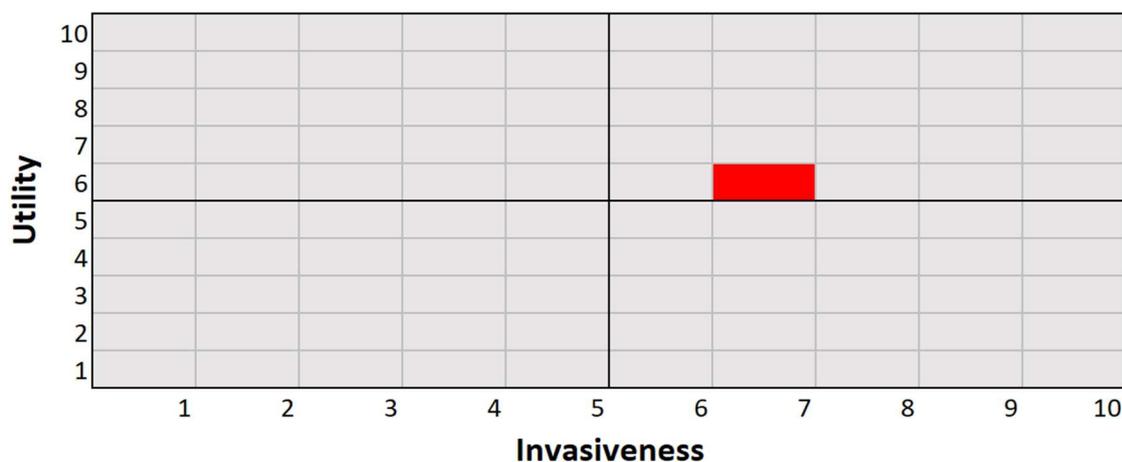
Assuming that a lawful ground for processing may be found under article 9 of GDPR a DPIA will be required.

Here an assessment of the necessity and proportionality of the processing is required.

## Necessity vs Proportionality

In this form special category health data is processed on an ongoing basis in the name of serving a positive public interest need.

On this basis, the Castlebridge team evaluated the Utility and Invasiveness of the proposed processing as a 6 on Utility given the pressing public interest need that is supported. As temperature readings are not likely to provide sufficient information and are likely to present false positives and false negatives a score above 6 cannot be given. In terms of invasiveness we have given this form of processing a score of 7 as special category data is being processed.



At this level a change in the way in which the technology is employed is recommended.

<sup>11</sup> <https://ico.org.uk/global/data-protection-and-coronavirus-information-hub/data-protection-and-coronavirus/workplace-testing-guidance-for-employers/>

## ***Action Strategy B. Voluntary scanning without Monitoring***

An alternative approach to using this technology to place the data entirely in the hands of the individual to whom it applies. A temperature would be read and will appear on a monitor tied to the scanner, but only be visible to the immediate individual to whom it pertains. Here no personal data is processed by another party at all.

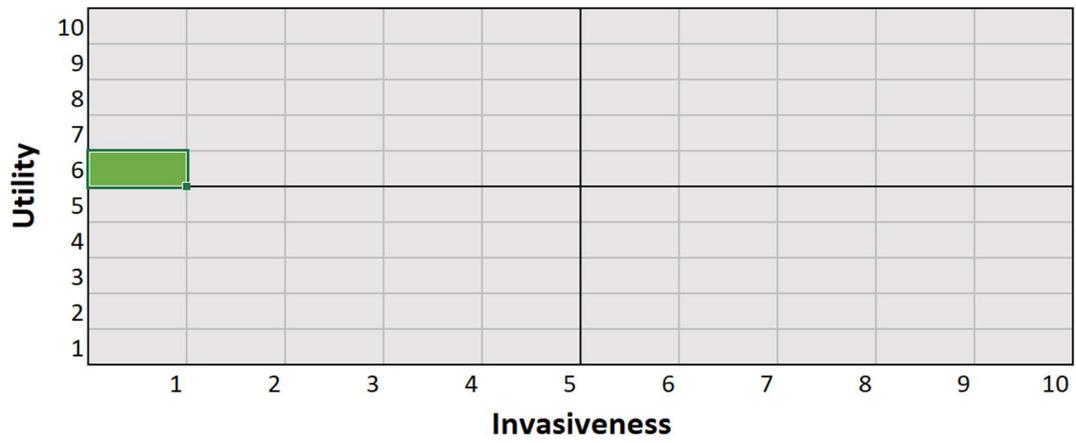
This approach relies upon the individual entering a designated area to take account of their own possible symptoms and decide not to enter the area out of fear of exposing others.

Such an approach minimises the privacy impact of the technology, however positive effects will be reliant upon public trust and positive employee-employer relationships to achieve compliance.

## **Necessity vs Proportionality**

In this form, the camera processes no data on an ongoing basis yet serves a positive public interest need, it is our assessment that it is minimally invasive of individual's privacy for a sufficient degree of utility.

No data is processed by an external party. The individual always retains full control of their data and makes decisions accordingly. On this basis, the Castlebridge team evaluated the Utility and Invasiveness of the proposed processing as a 6 on Utility given the pressing public interest need that is supported. As temperature readings are not likely to provide sufficient information and are likely to present false positives and false negatives a score above 6 cannot be given. In terms of invasiveness we have given this form of processing a score of 1 on the invasiveness given the high level of transparency about processing and how data is to be used and the minimisation of the data requirements, particularly compared with alternative approaches.



At this level, the project is recommended as a valuable undertaking.

# Conclusion and Recommendations

After a prolonged period spent in lockdown much attention is now upon the staggered return to “normal” life. Ensuring a safe working environment for employees is a central concern at this stage.

Thermal scanners which can measure body temperatures are one tool which may assist in this regard. However, natural limitations exist for this Temperature checking in general has limited value as an estimated 40% of Coronavirus carriers may be asymptomatic. At the same time, temperature checks can give a high number of false positives. As such thermal scanners are best understood as a tool which may complement an overall public safety plan but can in no way replace a comprehensive plan.

Given the limitations effecting the overall utility of such devices it is worth considering less invasive ways to implement them. Using thermal scanners in a manner where the individual alone may see her own data may be highly advisable.

Limited utility would be lost, and the public awareness and public trust aspects of the programme and overall response would rise. It would simply serve as a tool to bolster an overall public health strategy.

Beyond the use of technology decisions must be taken on the ramifications of an employee showing a temperature beyond normal ranges. Arrangements protecting the rights and health of the employee and co-worker must be thought out and implemented.

Employers or other organisations considering the use of these technologies must consider the potential impact on fundamental rights and freedoms arising from their use, and should consider that in the context of the open questions as to their actual effectiveness in an infection control context.

As these represent novel technologies that could have a potentially significant impact on the rights and freedoms of employees or other categories of individual, it is essential that an appropriately rigorous DPIA is undertaken by any organisation adopting these technologies and appropriate mitigations be put in place to balance the impact on the data subject and also to avoid a false sense of security arising from the risk of false negatives from asymptomatic cases or individuals masking symptoms in order to return to work.