IMPLEMENTING THERMAL IMAGING TECHNOLOGY: 3 THINGS TO CONSIDER

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Thermal Imaging Technology

What you need to know

As the world copes with COVID-19, organizations are exploring new technologies in anticipation of reuniting the workforce in a safe and practical manner. Due to this, there are some hopeful yet unrealistic expectations about the capabilities of thermographic equipment.

Despite very limited data proving their efficacy, thermographic cameras are an emerging technology for mass detection of elevated temperatures. However, not all thermal cameras can accurately measure elevated skin temperature. Any security professional should be wary of entities offering devices that can detect elevated temperatures in crowded or non-regulated environments. Thermal cameras require controlled, ambient conditions with a gradual stream of people passing in front of them to be accurate. Furthermore, it should be noted that while there are thermal cameras in the physical security space that are pursuing FDA approval governed by ISO 13154, none have yet to be certified as of the date this whitepaper has been published. There are some thermal cameras that meet the ISO standards for identifying febrile humans via thermal screening, but they are not yet widely available to commercial enterprises outside of the pharmaceutical and biomedical industries.

Additionally, companies should be mindful that these technologies have garnered massive attention, but their implementation comes with legal and ethical complications. Ultimately the technology may lead to a false sense of security.

If your organization is contemplating implementing these devices as a protective measure for employees entering your workplace, it is important to consider current governmental guidelines for their use, the expenses required, health data privacy, and developing a staged approach for returning to work.

1. Don't Forget to Read the Fine Print: What the FDA Has to Say
2. Weighing the Costs and Benefits
3. Employee Data is Just as Critical as Employee Health: HIPAA and GDPR

1. Don't Forget to Read the Fine Print: What the FDA Has to Say

As these devices are quickly flooding security markets, it is important to be prudent in believing any manufacturer or supplier claims. Thankfully, any device intended for adjunctive diagnostic screening or testing is required to submit a premarket notification to the FDA and must receive clearance prior to marketing these devices in the United States . The FDA also understands that thermographic cameras may provide some benefit during the current pandemic and has issued guidance on their use and limitations in response to their growing use and demand . The administration does not object to the distribution and use of tele-thermographic systems intended for initial body temperature assessment, as long as such devices do not create an undue risk regarding the pandemic. They also recommend specific device labeling to help users understand the technological limitations .**The guidelines are also extremely clear that elevated temperatures detected by these technologies must be confirmed by a secondary device.**

While thermal imaging technologies seem promising, the FDA clearly notes that these devices alone cannot diagnose anyone with any disease or illness, and it is important to remember that COVID-19 is also spread by asymptomatic carriers, not just those with a fever. **Organizations will need to evaluate the risk of liability as well as financial burdens due to missing asymptomatic carriers potentially infecting others in a workplace.** That being said, thermal cameras may provide some benefit in the screening process in order to return to work safely with appropriate protective measures in place.

2. Weighing the Costs and Benefits

Thermal imaging units can range anywhere from $2,000 for a basic unit to $30,000 on the higher end depending on the manufacturer. As mentioned earlier, some manufacturers may require specific conditions like ambient temperature or a slow, steady stream of people to ensure accuracy.

Accommodating those requirements will require consideration prior to implementation. For instance, consider if you will need a turnstile that only allows one person in at a time and a delay between entries. FDA guidelines also require the use of a secondary device, so the cost of that unit should also be included in any budget.

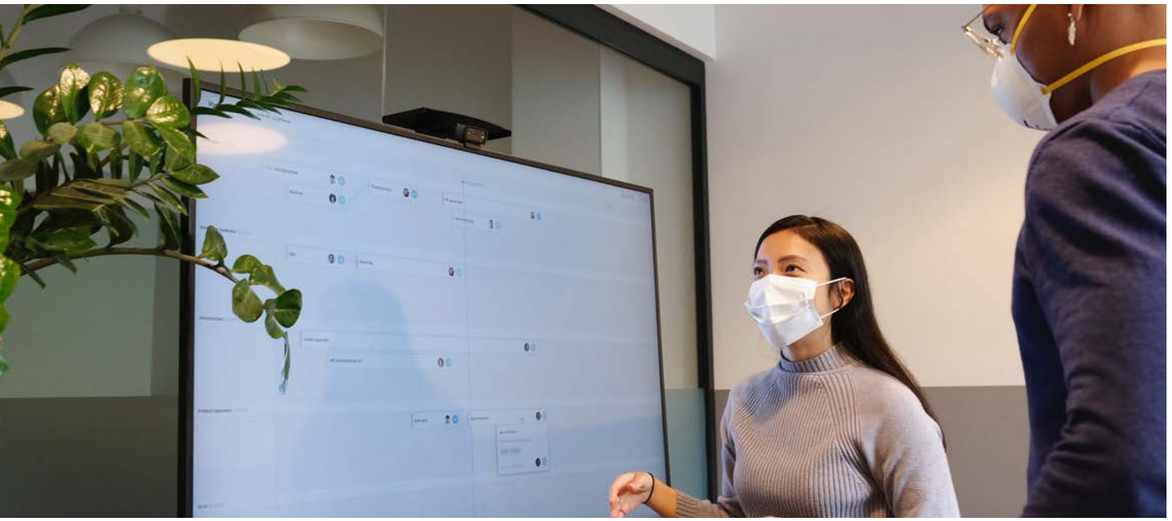
Another important aspect to consider is if your organization will use a guard service to operate the secondary device, which in many cases will be a handheld thermometer. Adequate personal protective equipment will need to be provided for those individuals including gloves, hand-sanitizer, and masks or face shields.

There are also considerations to explore should your organization choose to integrate thermal imaging units into your access control system. For instance, if your organization uses CCure, you can implement clearance level filters for employees based on screening results that can grant or deny badge access. Information on how to create and implement those filters can be found here. Keep in mind the costs associated with maintaining and auditing these reports and filters when creating your budget.

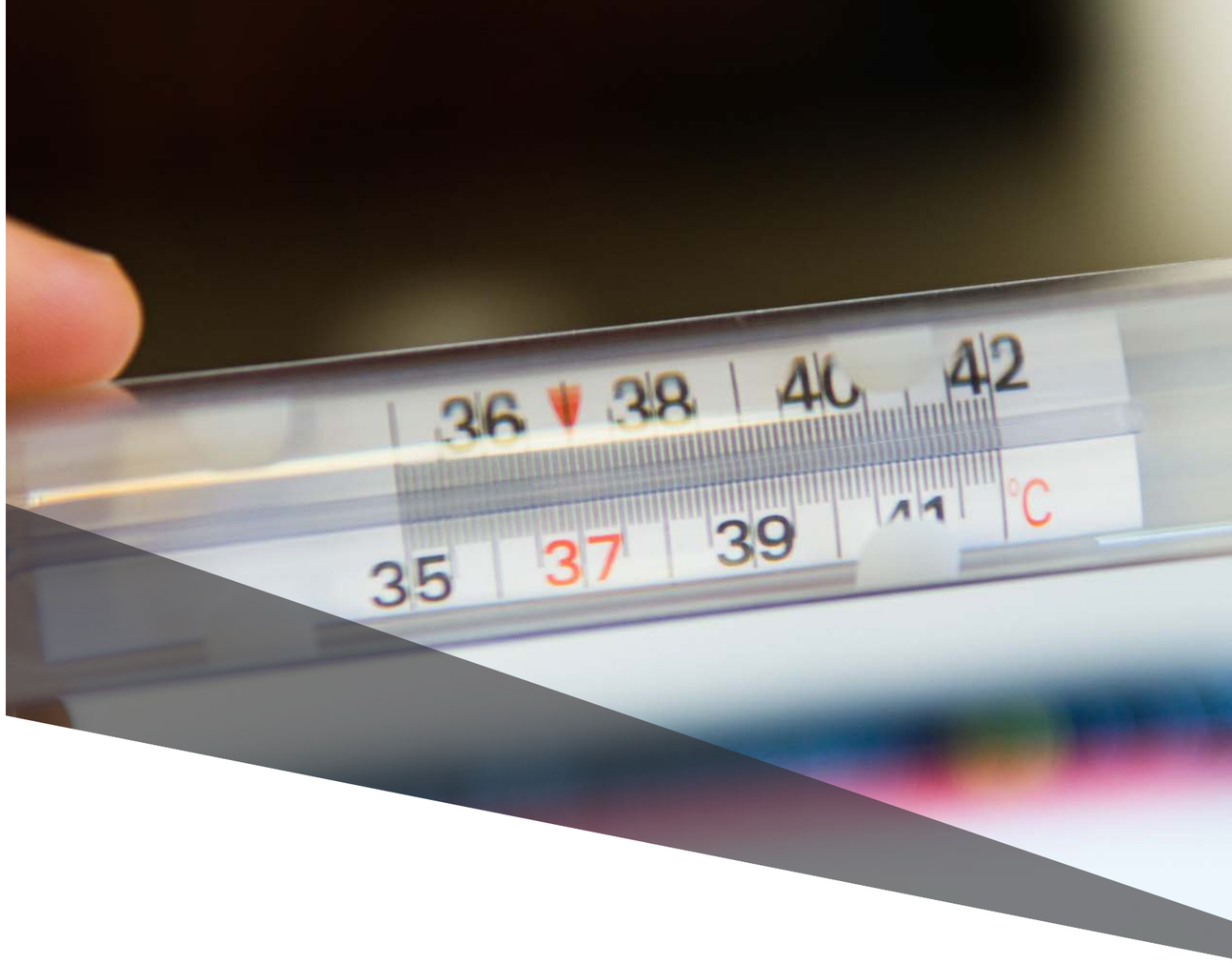
Beyond the costs associated with implementation, buyers should be aware that the accuracy of thermal cameras varies widely by manufacturer. Even the most consistently stable cameras are prone to false positives because the skin temperature can be elevated by weather conditions and exercise. Furthermore, many people with COVID-19 display no symptoms and would not be detected.

3.

Employee Data is Just as Critical as Employee Health: HIPAA and GDPR



Beyond the costs and risk/benefit analysis, these technologies also pose some privacy challenges in the US and Europe. The Health Insurance Portability and Accountability Act (HIPAA) details privacy provisions detailing the protection of information related to any individual's health status. Additionally, the European Union's General Data Protection Regulation (GDPR), stipulates that an individual's health is considered a special category of personal data, which requires an additional layer of protection due to its sensitivity. Furthermore, the ability for an employer to lawfully collect personal health data is very limited. The GDPR does allow for health data processing when consent is given or if the data is used for the "monitoring of epidemics and their spread," so these technologies could potentially be legally used. **However, it is critical that security professionals consult with their HR and legal teams before implementing thermal camera technology, due to the protected nature of the data collected.** It is also important to ensure an individual's privacy from other employees during thermal screening, as the failure to do so could lead to inadvertent discrimination based on visible screening results.



"...it is critical that security professionals consult with their HR and legal teams before implementing thermal camera technology, due to **the protected nature** of the data collected."

Conclusion

Unfortunately, thermal screening is not a complete solution for determining a positive COVID-19 diagnosis. The disease can be spread while people are pre-symptomatic or asymptomatic , and thermal imaging does not offer any protection in these cases. When used in conjunction with other screening methods such as a health questionnaire, secondary device temperature confirmation, and medical professional expertise, thermal imaging may help identify employees with elevated skin temperatures which may mitigate the possibility of exposure. Organizations must weigh the costs of implementation as well as the risk of liability in order to determine whether this technology is the right solution at this time. Should your organization decide to use these technologies, be sure to collaborate with your HR and Legal departments prior to implementation to ensure all governmental guidelines are effectively met.

END NOTES

1. Section 510(k) of the FD&C Act (21 U.S.C. 360(k)) and 21 CFR 807.81
2. https://www.fda.gov/media/137079/download
3. https://www.fda.gov/media/137079/download
4. https://www.cdc.gov/coronavirus/2019-ncov/hcp/planning-scenarios.html

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