

Companies' use of thermal cameras to monitor the health of workers and customers worries civil libertarians

'I don't believe body temperature is a piece of private information anymore,' said the CEO of one company that manufactures a system that scans crowds.

[Drew Harwell](#)



A thermal camera scanning for covid-19 sufferers in Buenos Aires. (Agustin Marcarian/Reuters)

The workers wore masks and kept their distance on the factory floor, but the health-care manufacturing plant still had a problem: People were standing too closely together on smoke breaks.

So engineers at [Landing AI](#), a start-up that builds artificial-intelligence

systems for industrial clients, designed a "[social distancing detector](#)": Camera software that rings a buzzer or alerts security staff when two people stand less than six feet apart.

"It's not to punish them," said Kai Yang, a company director. "The intention is to try to keep them safe."

As corporate America itches to reopen, company leaders are scrambling to install fever-screening stations, digital trackers and other security systems as part of a vast experiment designed to flag the potential risks of the coronavirus' spread.

They range from standard thermometer guns to more sophisticated social-distancing and heat-detection cameras, some of which are paired with facial-recognition software that security officials can use to track and identify the suspected unwell.

Public-health experts expect that temperature-scanning systems, like metal detectors and security pat-downs before them, will become a widespread staple of public life. In the weeks to come, they could be installed not only at airports and arenas but workplaces, schools, housing complexes and anywhere else Americans gather en masse.

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But some health and labor experts worry the public-health emergency has shoved open the door for unproven surveillance techniques, many of which could pose their own risks as millions of Americans head back to work.

It's already forced changes in the way the U.S. government deals with long-standing practices intended to ensure hiring decisions are not subject to bias against the disabled. Federal law bans companies from forcing workers to take medical exams, including checking their temperature, but the Equal

Employment Opportunity Commission [revised its rules](#) last month to say employers could now take workers' temperatures whenever they wanted — and could withdraw a job offer if a newly hired worker was diagnosed with covid-19.

Fever surveillance also faces some critical weaknesses. A person's temperature can go up for lots of reasons — exercise or overeating; stress or excitement; the flu, or just a hot room — limiting the devices' effectiveness in determining whether someone has fallen ill. And an infection does not always give someone a high temperature, either: Workers can spread the virus without having a fever and while feeling perfectly fine.

"Most people with a fever don't have coronavirus, and slapping the coronavirus-positive label on people just because they have a temperature is going to cause huge problems," said Lewis Maltby, the president of the [National Workrights Institute](#), an employee advocacy group. "Being sent home because you accidentally got dinged for coronavirus is like being stamped with the scarlet letter. No one will go anywhere near them."

[*The post-pandemic workplace will hardly look like the one we left behind*](#)

The scans aren't regulated by federal law, leaving businesses to decide their own rules on how aggressively to hunt for infections. Though thermal scanners would typically require Food and Drug Administration testing and approval, the agency [said this month](#) it "does not intend to object" to their widespread use.

The new FDA [guidelines](#) say such "telethermographic systems" should be used alongside secondary screening methods, like clinical-grade thermometers, but the rules are nonbinding and not legally enforced. An FDA official said in a statement that the agency was "committed to maximum regulatory flexibility" during the pandemic.

Civil-liberties experts also worry that the automated systems will oversee

crowds of people who may not know or consent to being watched. With such surveillance gaining rapid acceptance due to the public-health crisis, advocates worry the systems will secure a foothold in American life that will last long after the outbreak ends, becoming a mandatory fact of life not just for workers but for customers — as well as anyone walking into a school, gym, housing complex or other public venue where such systems are deployed.

Scanners already have been installed in grocery stores like City Farmers Market in Atlanta, which [tells customers](#) that anyone registering over 100.4 degrees on a thermal camera “will be discreetly informed” by a staff member and given “an alternative for [their] shopping.”

[*The Cybersecurity 202: Companies join governments in rush to launch coronavirus tracking apps*](#)

Fever checks for workers are becoming commonplace as some local, state and federal leaders increasingly talk up a broad relaxation of public lockdowns. Several companies have said they are using no-contact thermometer guns, which measure the heat of a person’s forehead, to send home workers with a temperature over 100 degrees. The method is quicker and less precise than medical-grade thermometers, but has still led to long lines and bottlenecks as employees enter their workplaces.

Home Depot said it has distributed thermometers to workers in stores and warehouses for pre-shift health checks and that any worker with a fever, coughing or shortness of breath is told to stay home. At Walmart, workers sent home after a temperature check won’t be able to return until they can prove they’ve been fever-free for at least three days.

Businesses are racing to stock up their own medical war chests: A McDonald’s representative said the company bought no-contact infrared thermometers for all of its 14,000 U.S. fast-food joints and is “continuing to deliver these as supplies become available.”

[As U.S. coronavirus fatality rate rises to 5 percent, experts are still trying to understand how deadly this virus is](#)

The extra scrutiny will also require a major ramp-up in training and hiring. Some companies, [including The Washington Post](#), have already begun hiring “temperature assistants” to help screen employees.

Other companies are turning on thermal cameras, which can gauge the temperatures of people in a crowd and were widely used in airports following the SARS outbreak in 2003. Tyson Foods installed walk-through temperature scanners at its sprawling meat-processing plants; the investment bank Goldman Sachs is [considering following suit](#).

Several corporate giants are using multiple layers of temperature scans to more closely pinpoint potential risks. Workers and visitors entering the Wynn Resorts hotels and casinos on the Las Vegas Strip will be [monitored by thermal cameras](#) and, if seemingly feverish, taken into a secondary room to be assessed by a no-contact thermometer.

Amazon, which has been doing daily thermometer checks at its sprawling warehouses, is also rolling out thermal cameras “to create a more streamlined experience,” a spokeswoman said. (Amazon chief executive Jeff Bezos also owns The Post.)

[As they rushed to maintain U.S. meat supply, big processors saw plants become covid-19 hot spots, worker illnesses spike](#)

Some companies are pushing for monitoring even after workers make it through the door. At a Ford-owned manufacturing plant in Michigan, a dozen volunteer workers are testing special wristbands that vibrate when another person gets too close, a company spokeswoman said. The Bluetooth-enabled bands also log who the person has come into contact with, potentially making any new chain of infection easier to trace.

The corporate consulting firm PricewaterhouseCoopers is [planning to launch](#) a similar tracing tool next month that would use workers' cellphones to record who they get close to in an office in hopes of blunting the virus' spread. Apple and Google said they intend to push that kind of ["exposure notification" technology](#) onto billions of phones in the coming weeks.

The virus has helped transform niche thermal-camera companies known mostly by border-patrol and military buyers into major corporate stars. FLIR Systems, the Oregon-based hardware firm that makes most of the world's thermal cameras, has seen its stock soar 60 percent over the last month amid reports of increased demand.

But the rush is also attracting start-ups that see a lucrative opportunity in equipping a nation of reopened offices, schools and restaurants. Engineers at the facial-recognition start-up Kogniz recently began adding the heat-detecting parts in thermal cameras, known as microbolometers, into their surveillance-camera systems, allowing a security team to quickly identify a person, assess their temperature and track them through the workplace.

[*How much risk are we willing to take?*](#)

Daniel Putterman, Kogniz's co-chief, said the Silicon Valley start-up is pitching its "HealthCam" system to corporate clients worried about worker outbreaks. More than 100 of the units, which start at \$7,000, have been sold in the last two weeks to several food-processing plants, medical-marijuana businesses and other companies.

"The corporate campuses are getting very interested," said Putterman, whose last company, Pawscout, made location-tracking tags for pets. "They're all trying to figure out what 'back to work' means."

None of Kogniz's current clients, he said, had begun using the facial-recognition setting to pair people's temperatures with their identities. But he said some companies were more generally rethinking their guidelines

around privacy and surveillance amid the global pandemic.

“We feel like this AI can help bring things back to normalcy,” he said. “I don’t believe body temperature is a piece of private information anymore.”

Some experts worry the systems are too imprecise to inform the kinds of public-health decisions they’ll be used for everyday. Thermal cameras use sensors that can detect invisible infrared light to measure the heat of a person’s skin, but they can’t take internal body temperatures, making them vulnerable to imprecise measurements or misreadings.

[*Governments around the world are trying a new weapon against coronavirus: Your smartphone*](#)

The Centers for Disease Control and Prevention told port-screening agents in [a 2014 guide](#) that thermal cameras had not been evaluated for “screening multiple individuals in an uncontrolled environment,” were not as accurate as no-contact thermometers and “may be more difficult to use effectively.” The scanners have a margin of error of around 3 degrees Fahrenheit — enough to make the difference in labeling someone as healthy or sick.

Two researchers who assessed thermal cameras for the Electronic Frontier Foundation, Matthew Guariglia and Cooper Quintin, [wrote earlier this month](#) that the risks of false positives and inaccurate matches severely eroded their usefulness and raised concerns over expanded monitoring. “A new network of surveillance cameras with dubious thermal measuring capabilities is not a tool we should deploy,” they wrote.

Some businesses told The Post they'd only use the scanners in tandem with other screening systems. But labor experts said the accelerating timelines for reopening, and the lack of federal guidelines around proper scans, could lead some companies to test out experimental approaches in the hopes they could more quickly help people resume some shape of their normal lives.

In the days after releasing video of their social-distancing detector prototype, Landing AI's chief Andrew Ng said a half-dozen potential customers — including manufacturers, mining companies and the vice minister of a "well-run democratic country" he declined to name — had contacted the firm eager for more details.

His team, Ng said, is "respectful of individual rights" but feels that such systems can enhance safety while still protecting people's privacy. "Solutions like this," he added, "can play a huge role when we start to reopen America for business."