

No US coronavirus cases were caught by airport temperature checks. Here's what has worked

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(CNN) One of the enduring images of the current coronavirus outbreak is a space-age looking thermometer pointed at an airplane passenger.

Eleven airports in the United States are using these temperature checks as part of expanded screening for novel coronavirus, and those measures might seem reassuring. If someone doesn't have a fever, it seems like they're fine -- right?

Not so fast.



Coronavirus death toll rises above 2,000 worldwide

While the US Centers for Disease Control and Prevention has screened more than 30,000 passengers in the past month, not a single US coronavirus case has been caught by airport temperature checks, according to a CNN investigation.

There has long been debate about the usefulness of airport temperature checks, but this recent experience at US airports, plus a new European study, seem to point in the direction that they don't work. Earlier this month, British researchers published a study showing that temperature checks will fail to detect a coronavirus infection nearly half the time.

At least one country has found airport temperature checks so unhelpful that it decided not to do them during the novel coronavirus outbreak. Israel used them in previous years for Ebola, SARS and H1N1, but found that they didn't work.

"It is ineffective and inefficient," said Dr. Itamar Grotto, associate director general of Israel's Ministry of Health.



Fact-checking Tom Cotton's claims about the coronavirus

Grotto said the problem is that a normal temperature gives "false assurance." Passengers with normal temperatures could still be in the incubation period, which means they're infected, but have yet to develop a fever.

In addition, a small number of patients with the novel coronavirus don't have fever, according to published studies.

Some experts are convinced that for these reasons, temperature checks at airports are useless.

"I don't think airport temperature checks have any major effect on stopping or even slowing down transmission," said Michael Osterholm, an epidemiologist and professor at the University of Minnesota School of Public Health. "We just don't have any good data to support that."



An American evacuated from Japan on a US charter flight says she didn't know people on the plane had tested positive for coronavirus until it landed

Since mid-January, the US Centers for Disease Control and Prevention has been employing temperature checks at selected airports, at first on people flying in from Wuhan, China, the epicenter of the outbreak,

and now on all passengers who've been anywhere in mainland China in the past 14 days. The temperature checks are part of an overall screening effort that includes giving passengers cards telling them to watch out for fever, cough and trouble breathing, all symptoms of the novel coronavirus disease, also called COVID-19.

"Finding sick people who are at risk for COVID-19, alerting asymptomatic travelers who may develop COVID-19 symptoms after arrival, and rapidly responding to any suspect COVID-19 illness, we can most effectively protect the health and safety of the American public," said Dr. Martin Cetron, director of CDC's Division of Global Migration and Quarantine.

Some experts say it's that card -- a simple card listing symptoms in English and Chinese -- that holds the key to detecting coronavirus infection -- not a thermometer.

2019 nCoV CORONAVIRUS

HEALTH ALERT: *Travelers from China*
There is an outbreak of respiratory illness in China.

Travelers are required to be monitored for up to 14 days after leaving China.

Travelers should stay home and monitor their health within this 14-day period.
A health official will contact you to give additional instructions.

Take your temperature with a thermometer 2 times a day and watch your health.

If you develop a fever (100.4°F/38°C or higher), cough, or have difficulty breathing:

- Call your health department for advice before seeking care.
- If you can't reach your health department, call ahead before going to a doctor's office or emergency room.
- Tell them your symptoms and that you were in China.

CDC

For more information: www.cdc.gov/nCoV

Some air passengers receive this Travel Health Alert Notice from the CDC with information about coronavirus.

Temperature checks for US coronavirus cases

CNN reviewed statements by local, state and federal health officials, and emailed and spoke with officials, to determine how many people eventually diagnosed with coronavirus went through airport temperature checks.



With mom and daughters out of coronavirus quarantine, a Wisconsin family is happy to be together again. Ten passengers flew into US airports on commercial airliners and were later diagnosed with coronavirus. CNN's investigation shows that four of those 10 passengers went through temperature checks and were found not to have a fever or any other symptoms of the virus. Two of those passengers flew into Los Angeles International Airport and two flew into San Francisco International Airport. Previously, a CDC spokesperson had told CNN that two of the passengers were symptomatic during flight, but the spokesperson later said they were asymptomatic while flying. Another 4 out of the 10 passengers were not screened because they flew into airports that did not have screening at the time. Those cases are in Illinois, Washington state, Massachusetts and California. It's unclear whether the final two passengers went through temperature checks because health officials at the CDC and in Wisconsin and Arizona refused to say when asked by CNN.

When human nature gets in the way



Nebraska's specialized medical care has handled Ebola. Now it's taking on the novel coronavirus. There's another reason why airport temperature checks don't always work: human nature. Let's say someone's on a long-haul flight to the United States and starts to have a scratchy throat or feel tired or achy. The passenger might attribute those feelings to jet lag or dry air on the plane. Maybe they would take a pain relief medicine such as Advil or Tylenol and try to forget about it. "That's just human nature," said Osterholm, director of the Center for Infectious Disease Research and Policy at the University of Minnesota. When the person lands, they might not have a fever because, in addition to relieving pain, Advil and Tylenol also treat fever. "That's why for this type of screening, there's no evidence it has any measurable impact on the ultimate course of the outbreak," Osterholm said.

What does work

While airport temperature checks haven't caught any coronavirus cases, the information cards have helped catch US cases of the virus at least twice.

On January 24, a man flew into San Francisco "and was found to be totally healthy and asymptomatic," according to Dr. Martin Fenstersheib, interim health officer for San Benito County, California.

As part of the screening routine, the passenger was given a card -- technically called a Travel Health Alert Notice -- that explained he should take his temperature twice a day and call his local health department if he developed a fever or cough or had difficulty breathing.

The next day, the man had symptoms.



Coronavirus danger for doctors 03:22

"So he looked back at [the card] and said, 'Oh, we need to stay at home, per this information, and contact our local health department,' which they did. So it's good that they were screened, and he abided by that information, so that's good," Fenstersheib said at a press conference.

In the other case, a man flew from Wuhan to the Los Angeles airport in mid-January, where he was screened and did not have a fever or other symptoms of coronavirus. He was given the traveler alert card and flew immediately to Mexico.

After a few days in Mexico, the man had a family emergency in China and flew back to the Los Angeles airport with plans to immediately board a flight to Wuhan. But at the Los Angeles airport he felt ill, and while wearing a mask, he presented himself to health officials there.

"He had the card and he remembered," a health official told CNN.

US travel restrictions to stop the spread of coronavirus

The CDC has taken other steps to prevent the spread of coronavirus.

On February 3, the CDC announced that most foreign nationals who've been in China in the past 14 days will be barred from entering the United States.



Wuhan Coronavirus Timeline Fast Facts

According to the new policy, US citizens, lawful permanent residents and their families who have been in China in the past 14 days will be allowed to enter the United States only through one of the 11 airports that have health screenings.

Those 11 airports include the San Francisco and Los Angeles airports as well as John F. Kennedy International Airport in New York; Chicago O'Hare International Airport, Hartsfield-Jackson Atlanta International Airport, Seattle-Tacoma International Airport, Detroit Metropolitan Airport, Daniel K. Inouye International Airport in Honolulu, Washington Dulles International Airport, Newark Liberty International Airport, and Dallas Fort Worth International Airport.

After screening, passengers who are found to be symptomatic for coronavirus will receive further medical evaluation.

Passengers who are asymptomatic are handled differently depending on their travel history. If they've been in Hubei province in the past 14 days, they're not allowed to continue their travels, and must be quarantined at a location near the airport for 14 days.

If they've been elsewhere in mainland China, they can continue their travels and are asked to stay home as much as possible and monitor their health.

The lesson of Ebola

On September 19, 2014, Thomas Eric Duncan, a Liberian citizen, flew to the US to visit family. By official accounts, he left Liberia a healthy man.

Days later, he fell ill and went to an emergency room in Dallas, Texas. Doctors there missed his Ebola infection, and later he was admitted to that hospital, where he subsequently infected two nurses and then died.

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Five years later, that's exactly the scenario the CDC wants to avoid with the new coronavirus.

To that end, the CDC has put out guidance to doctors on how to handle possible coronavirus infections, and to hospitals on infection control for the new virus.

"They're doing a great job at this," said Osterholm, the epidemiologist in Minnesota.

These are the measures -- information to travelers, doctors and hospitals -- that can help stop the outbreak, Osterholm said, and less so the temperature screening.

"But everybody around the world is doing it, so I guess if we didn't do it, we would look like we were being derelict in our duty," he said.

CNN's Amanda Sealy, Shelby Lin Erdman, Michael Nedelman, Sam Romano, Toby Lyles and Julie In contributed to this report.