Robots take on coronavirus
Smart machines are being deployed to minimize contact between healthcare professionals and patients

Hundreds of robots have been deployed in hospitals, office buildings and airports around the globe as healthcare professionals and businesses turn toward innovative new ways to combat the spread of the deadly coronavirus.

Also known as COVID-19, the coronavirus has infected some 80,000 people worldwide, including at least 1,700 medical staff in China alone. Nearly 2,500 people have died from the virus so far.

In a bid to minimize person-to-person contact, artificial intelligence-powered devices equipped with thermometers and cameras are taking patients' vitals and helping doctors diagnose people with the illness from a safe distance. Others are being used to disinfect hospital rooms and even airplanes.

One such machine is the Temi robot. Developed by an Israeli company, Temi is three feet tall and features a touchscreen, Amazon's Alexa technology, a built-in sound system, a tray for charging phones and an autonomous navigation system that allows it to move around on its own while avoiding obstacles.

"Many people are in quarantine. Doctors need to visit them. People need to bring them food and someone needs to take their temperature – all of these things a robot can do," Yaron Yoels, the CMO of Robotemi, told The Media Line. "Then you can refrain from contact with people who are infected."

Billed as the world's first affordable personal robot (it costs $1,999), Temi is currently operational in a number of sectors, among them healthcare, hospitality, enterprises, retail and education. It was recently listed in TIME Magazine's 100 Best Inventions of 2019.

Yoels explains that when news of the coronavirus first came to light, Robotemi – which is now headquartered in Shenzhen, China – decided to add special accessories to the machine, including a thermometer to check people's temperature and a tray to carry food and drink to patients under quarantine. Temi also allows patients to communicate with loved ones.

"We started to market it to hospitals, airports and other places," Yoels said. "Immediately, we got many requests and have already deployed in a few hospitals in Hong Kong, South Korea and China. [It] allows doctors to visit these patients without having to be in contact with them."

So far, hundreds of Temi robots have been drafted for work in hospitals, airports and elderly-care homes. According to Yoels, the machine is also being put to use in offices throughout China to check arriving employees for fever – one of the most prominent symptoms of COVID-19. If a health issue is detected, Temi directs the employee to a doctor's office to avoid infecting colleagues.

In addition to telepresence robots, which enable video communication, monitoring and the safe delivery of food and medicine, robots are ramping up the fight against COVID-19 by disinfecting whit might be contaminated spaces.

Xenex Disinfection Services of San Antonio, Texas, has created UV robots that are in use in over 500 healthcare facilities across the United States.

"Studies show that less than half the surfaces in a hospital room – bed rails, tray tables, door knobs, grab bars, etc. – are properly disinfected when the room is being cleaned and prepared for the next patient," Melinda Hart, director of media relations at Xenex, told The Media Line.

"Using the LightStrike robot as part of a comprehensive infection prevention program enables hospitals to quickly get rid of those pathogens before they can endanger patients and staff," she said.

The LightStrike robot uses xenon (an odorless, stable gas) to create an intense UV light that destroys bacteria, viruses, mold and fungus on hospital surfaces. Hospitals using the robot have shown decreases of 50%-100% in Clostridium difficile bacteria, Methicillin-resistant Staphylococcus aureus (MRSA) super bugs and surgical site infection (SSI) rates, according to Hart.

Since the machines are portable, they can be deployed throughout a hospital, including restrooms, labs and waiting rooms, and even in ambulances. Patient rooms can be disinfected in just 10-15 minutes.

"We consider our robots to be part of a hospital's cleaning team and they do not replace any employees," she emphasized. "First, the room has to be cleaned and all visible dirt/fluids removed, trash emptied, linens removed – a normal cleaning. Then, once the room is visually clean, the robot is brought in by the EVS team-member and quickly destroys microorganisms that may have been missed during the manual cleaning process."

Other robotics firms are tackling germs in public spaces that are particularly prone to the spread of infectious diseases. California-based Dimer UVC Innovations has developed GermFalcon, a robot that is designed to disinfect airplane cabins.

"Germs survive [for] several days on airplane surfaces, and airlines currently have no standards for onboard hygiene," Elliot M. Kreitenberg, president and co-founder of Dimer UVC Innovations, told The Media Line, noting that the technology had recently been used at LAX airport.

"Potentially contaminated planes arriving from China were disinfected… until flights from China were suspended," he said.

Kreitenberg declined to share the names of airlines using GermFalcon. However, he underlined that there were currently no hygiene regulations in place for air carriers and that he therefore believes the bot "could be the most important hygiene invention since the toilet."

Whether deployed in hospital rooms, office buildings or airplanes, industry leaders believe the healthcare industry will come to rely more and more on robots in the coming years. Already used for assisting in surgeries and dispensing medicines, autonomous machines are expected to make life easier for medical staff by providing information and other services to patients in a timely manner.

"If you're stuck in a hospital waiting for the doctor to visit you [and] tell you what your situation is, and then you have to wait another five hours, at least a robot can somehow assist in telling you what it's about and give you some [kind of] explanation, which doctors sometimes don't have time to do," Robotemi's Yoels told The Media Line.

"It's not for nothing," he said, "that the healthcare sector is one of our biggest [customers]."

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