CO-BOT: PROTECTING FROTNLINE CORONA WARIORS

The Problem

The COVID-19 pandemic has upended health systems, economies, and social support systems around the world, and continues to grow rapidly. It has infected almost few millions people around the globe resulting in close to 375,000 deaths. India has recorded along 190000 cases with a rapid increase in numbers. Since detecting the disease is not so easy due to its mild symptoms and even in many cases no-symptoms and absence of any drugs so far; world-wide it has been recognized that the only way to control its spread is social distancing and isolation of infected person.

The frontline Corona Warriors- the health workers and doctors are playing most crucial role in each stages of India's fight against corona- Prevention, detection, care and response. It has been reported that many doctors and nurses have been tested positive across India. Most of these infections were transmitted by patients in a hospital environment, during the care of corona infected patient. The medical workers who came in contact with the infected personnel had to be quarantined and the hospitals or health facilities had to be fully or partially closed and cases has also been reported of loss of life of corona warriors. In this situation, to win the Fight Against Corona, the safety of medical professionals and frontline warriors is prime concern.

It is often found that doctors and nurses do have personal protective equipment but they are more vulnerable to COVID-19 as they are interacting with positive patients on daily basis while providing food, water and regular medicine, which is a huge threat, as they themselves can, became carriers of the virus.

The remote-controlled robot 'Co-Bot' has been developed in West Singhbhum district to provide food and medicine to COVID positive patients without human intervention to minimize the risk of frontline workers.

The Solution

The objective of designing and deploying CO-BOT is to minimise interaction between ancillary healthcare workers and paramedical staff with positive cases. In the COVID-19 hospitals, the Co-Bot deliver medicine, food and water to patients, without the need of health workers and ancillary staff to attend to COVID-19 patients in person.

Features:

a. The Co-Bot has been developed at ₹25000 per Bot while its carrying capacity is 45 kgs.
b. The machine runs by a remote with a range of 200-ft range, it can serve to the biggest possible wards.
c. It is fitted with 2 way speaker and mic system (Doctor can talk to patient and vice versa).
d. Ultrasonic obstacle warning system.

CO-BOT Serving in Isolation Ward of Sadar Hospital,

e. A waterproof device, so it can be sanitized and washed completely.
f. I P enabled camera to give live video feed that can be seen from anywhere in the world.

The CO-BOT which can move freely and operate remotely fitted with Wi-Fi camera with a micro-phone for two-way communication. The doctors can monitor patients without coming close to them and can easily pass on necessary instructions on the microphone. Another feature of the Co-bot is that it will serve food, water, medicines with lesser chance of spread of the lethal infection. A doctor or nursing staff can see through the camera installed in the robot if the patient picks the

correct medicines or not. The cameras can also keep vigil on the interaction between patients in the isolation wards. The speaker will enable staff to communicate with the patient and also the patient can air his/her grievance through the speaker and microphone. It is also waterproof — which comes handy during sanitising after coming near a patient.

The CO-BOTS developed by District Administration, West Singh under the leadership of Mr Aditya Ranjan, the young Indian Administrative Service Officer and engineering graduate has been deployed in two COVID Care facility of the district including Sadar hospital, Chaibasa.

Result

As health workers seek out the most expedient and safe way to grapple with the outbreak and limit contamination and spread of the virus, Co-Bot has effectively helped in providing services and care to positive patients in the COVID-19 hospitals or practicing social distancing. Co-Bot makes it possible for medical staff to communicate with patients remotely, saving time and allowing possibly contagious patients to stay confined.

Scalability:

CO-BOTs can be designed, customised and deployed in any COVID care facility across the state and country. With remote control it can be controlled and monitored from distance and through IP camera the facility or patient care unit can be monitored from any corner of the world making it possible for ensuring quality of care.

Conclusion:

Amid COVID-19 situation, the technological solution to prevent spread of corona and protect the frontline warriors from infection, Co-Bot has a potential to play critical role in India's Fight Against Corona as it also saves manpower during such crisis.

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