ICMR trial run: Mid-surgery tissue sample transport for advanced pathological testing

The trial run is part of a study undertaken for the first time through the collaborative efforts of ICMR, KMC, Manipal, and Dr. TMA PAI Rotary Hospital, Karkala

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The Indian Council of Medical Reserach (ICMR) in New Delhi. File. | Photo Credit: V.V. Krishnan

As part of a trial run by the Indian Council of Medical Research (ICMR), onco-pathological tissue samples were transported mid-surgery by drones under the i-Drone initiative.

Tissue samples were transported mid-surgery from a peripheral hospital for an advanced pathological testing at a tertiary setting for deciding if the resected tissue is cancerous or not.

The use of drones reduced the time required to transport the sample across 37 kilometres from 60 minutes to 16. Upon arrival, the sample was analysed, and the report was electronically conveyed back to the peripheral hospital. Subsequently, the surgeon proceeded with the surgery based on the received report. During the testing phase, researchers have uncovered various technical and operational challenges faced by communities in delivering timely biospecimens.

“This innovative approach when applied on a larger scale would enable faster decisions during surgery and improved access to high level health care for patients in peripheral hospitals,” a senior Health Ministry official said while providing details regarding the exercise.

He added that the trial run is part of a study undertaken for the first time through the collaborative efforts of ICMR, Kasturba Medical College (KMC), Manipal, and Dr. TMA PAI Rotary Hospital, Karkala.

“The inaugural trial flight carried the palpable mass sample of right iliac fossa from Dr. TMA PAI Rotary Hospital to KMC in visual line of sight,” the Council said.

The Union Health Ministry said that drones play a crucial role in agriculture, defence, disaster relief, and healthcare, especially during emergency situations by enabling rapid delivery of vaccines, medications, and vital supplies to remote and inaccessible areas.

This study aims to evaluate the potential use of aerial transportation systems (drones), to transport items such as pathology samples from secondary healthcare facilities to tertiary-level hospitals.

“Transporting samples for intraoperative decision-making in remote areas hasn’t been extensively explored or documented within the Indian context due to limited data on feasibility, utility, and cost-effectiveness,” Atul Goel, Director General of Health Services, said.

The Council has been using drones for healthcare purposes and conducting the delivery of medical supplies, vaccines, and medicines in remote areas of Himachal Pradesh, Manipur and Nagaland, and blood bag delivery in Delhi National Capital Region under its i-DRONE initiative.