

# THE STRAITS TIMES

## India looks to drones to deliver essential medical supplies to far-flung areas



A team from the Indian Council of Medical Research delivering blood and medicine by drone in Lahaul and Spiti, in the state of Himachal Pradesh, in October.  
PHOTO: INDIAN COUNCIL OF MEDICAL RESEARCH



**Nirmala Ganapathy**  
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NEW DELHI – In the sub-zero, snow-laden Himalayas, batches of bags of blood, plasma and platelets were flown by a drone over multiple 20km trips in a high-altitude drone delivery trial in October.

In less than seven minutes, the drone covered what would have been an hour's journey by road in challenging terrain.

“We wanted to check whether the blood was usable after transferring it using the drone,” said scientist Sumit Aggarwal, a programme officer at the division of epidemiology and communicable diseases at the Indian Council of Medical Research (ICMR), a state research institute.

It was. Besides blood components, the drone also transported essential medicine between Keylong, the administrative centre of Lahaul and Spiti district in the state of Himachal Pradesh, and remote areas such as Tholang district.

The successful two-week trial was part of a series undertaken by the ICMR to test drone deliveries under different climatic and geographical conditions, as India seeks to become a multi-sectoral drone hub by 2030.

In May, when temperatures crossed 40 deg C, scientists tested blood deliveries by drones in the vicinity of India's capital city New Delhi.

Plans are now being drawn up for organ transport, among other trials, including the delivery of sputum samples for tuberculosis testing in a tribal area in the southern state of Telangana to cut down diagnostic delays.

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“It (drone delivery) will support our health outreach,” Dr Aggarwal told The Straits Times.

He noted that drones were being used in healthcare in some African countries like Rwanda to transport medicine.

“But we in India, we have to generate evidence in the Indian context,” he added.



India aims to become a hub for drone manufacturing and use by 2030.

Drones, which are currently manufactured or assembled in India with parts sourced from countries like China, are used in policing, agriculture and defence, including manning India's porous borders in a bid to curb illegal activities such as smuggling and trafficking.

In agriculture, drones are widely used to spray crops with pesticide and to monitor farmlands.

In the healthcare sector, the use of drones came into prominence during Covid-19, when they delivered vaccines and other medicine to remote areas in north-eastern India.

Since then, diagnostic labs and other research institutes across the country have also been experimenting with drone use.


**Dr Mansukh Mandaviya (मोदी का परिवार)**    
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Since September, Indian multinational pharmaceutical company Cipla has carried out more than 80 flights, sending critical medicine for cardiac, respiratory and other essential chronic therapies from its stockist in the city of Mandi – located in the Himalayas in Himachal Pradesh – to pharmacies, hospitals and doctors in remote areas in districts like Hamirpur up to 95km away.

A journey from Mandi that would take three hours through winding roads wrapped around mountains takes about 20 minutes via drone, Cipla said.

“This has ensured the prompt delivery of medicine to remote chemists and clinics, significantly reducing the risk of delays, temperature fluctuations for cold-chain products and accidents on the state’s hilly terrains,” said a spokesperson.

The company, which partnered Skye Air Mobility for drone deliveries, is next planning to introduce drone use in northern Uttarakhand state and in districts in the North Eastern Region.

Medicines being placed into a drone in a collaboration between Skye Air Mobility and Flipkart...



Those in the drone business and scientists said the cost of using drones is equal to, if not less than, costs incurred through conventional transport in remote areas.

“Drones are in a nascent stage of technology. They are not yet very commercially viable for health systems to use for now,” said Dr Rutuja Patil, a biotechnologist and public health researcher at the KEM Hospital Research Centre in the western city of Pune.

“I have come across multiple trials, but none of those solutions became commercially viable,” she added.

Drones could be a solution for getting emergency supplies to remote areas, she said. But in areas where there are established logistics systems and transport networks, drones’ relatively higher costs will hinder their uptake.

In 2021, Dr Patil led a trial to use battery-powered drones to deliver essential medical items to community health centres in rural regions of the western state of Maharashtra, which has a strong transport network.

It cost 15,000 rupees (\$240) to deliver 2kg to 3kg by drone – far higher than the 3,000 to 4,000 rupees it costs for much heavier parcels delivered by road.

Other challenges include operating drones in highly populated areas.

In December 2022, the Delhi Metro shut down its services at the Jasola Vihar station for an hour after a pharmaceutical firm’s drone carrying blood vials fell onto the tracks.

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Despite the potential for such mishaps, the Indian government has continued to move towards facilitating the use of drones across multiple sectors.

It expects the drone services industry, which includes operations and logistics, to grow to more than 300 billion rupees and create 10,000 jobs over the next three years.

The government in 2021 cut down regulation and rules from more than three dozen approvals to just four, while dividing the country into three colour zones – green, yellow and red – based on the presence of airports, military installations and ports in the vicinity.

In green areas, no permission is necessary to operate a drone up to a maximum height of 122m from sea level, while in yellow zones permission is required and in red zones only the government can operate a drone.

Companies operating drones are upbeat about their use in the healthcare sector, saying costs will continue to come down as drone technology advances and usage becomes more widespread.

“Skye Air has developed a seamless integration system with healthcare facilities. This allows for real-time tracking of the drone’s journey, ensuring that healthcare providers have full visibility into the delivery process,” said Skye Air Mobility founder and chief executive Ankit Kumar.

He noted that drones were environmentally more sustainable in remote areas.

“This level of transparency not only builds trust but also allows for immediate action in case of any unforeseen circumstances.”

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