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Cross-Country Trek Brings Hope To Transplant Candidates

by [Brian Bossetta](#)

Paragonix Technologies set a record for the longest transport of a donor lung to a patient. The company also completed a long-distance transport of a heart from the same donor.

Organ preservation systems from tech startup Paragonix Technologies have saved two lives.

The Cambridge, MA-based company said its LUNGguard System safely delivered a donor lung from Anchorage, AK, to Durham, NC, a record distance in lung transport, according to the company, which [announced](#) the 3,714-mile journey in a 2 February release.

The lung arrived at Duke University Hospital, one of the largest organ transplant centers in the world, where it was successfully transplanted into a waiting patient.

The LUNGguard system resembles a high-tech cooler on wheels that keeps the lung viable for up to 40 hours at temperatures ranging from 4 to 8 degrees Celsius. The system uses the company's proprietary cooling technology so it doesn't require ice, which can damage organ tissue. LUNGguard is also designed with a rigid structure to further protect the organ in transport and connects to an app via Bluetooth for continuous monitoring. (Also see "[Paragonix Develops Devices To Reduce Transplantation Transport-Related Failure](#)" - Medtech Insight, 8 Sep, 2021.)

"While we consider many factors in selecting a donor, distance is a significant risk factor to moving forward." – John Haney

Once the donor organ in Alaska was found, the Duke University surgical team contacted Paragonix, the company said, requesting the LUNGguard system because traveling from North Carolina to Alaska to procure it themselves was impractical.

“While we consider many factors in selecting a donor, distance is a significant risk factor to moving forward. Transplant centers around the country are seeking ways to overcome the challenges associated with safely transporting organs further and new technologies show promise,” said John Haney, assistant professor of surgery at Duke University.

Paragonix also used its SherpaPak Cardiac Transport System to transplant the heart from the same donor in Alaska to a different patient seven hours away in Washington State.

Four transplant centers across the US, including Duke University, worked to make the transports happen, Paragonix said. The company procured two private planes – one from Spokane, WA, and one from Durham – to transport the organs.

In total, the company’s systems – both FDA-approved and cleared for use in transplant surgeries – enabled the successful transport of the donor’s heart and lung through a process spanning five flights totaling 4,788 miles over 31 hours, resulting in two saved lives.

One of the major challenges in transplant surgery, assuming a match is found, is delivering the new organ in time while it is still viable, which is why distance remains an obstacle.

Prior to this technology, organs were transported – and in some cases, still are – in the same ice chests used on fishing trips, making long distance transports impossible.

To address this problem, medical technology companies are designing systems that can preserve organs, such as Swedish medical technology company XVIVO whose novel method for storing and transporting donor hearts was recently used in an historic transplant of a pig heart into a human. (Also see "[Swedish Company’s Novel Device At The Heart Of Milestone Transplant Surgery](#)" - Medtech Insight, 18 Jan, 2022.)

Innovative preservation systems, such as these from Paragonix that can keep organs viable over extended periods of time and distances, could completely change the calculus for patients waiting to hear news that a match has been found.