MEDICAL BREAKTHROUGHS
RESEARCH SUMMARY

TOPIC: FORGET THE FREEZER: TRANSPLANT TRANSPORT GOES HI-TECH
REPORT: **MB #4842**

BACKGROUND: Organ transplantation is the surgical removal of a healthy organ from one person and then transplantation into another person whose organ has failed or was injured. It is considered major surgery that carries potential risks and drawbacks, the highest being organ rejection. There are nine types of organ transplants performed in the United States, according to the United Network for Organ Sharing in Virginia. In 2018, more than 36,500 organ transplants were performed, and most recipients were between the ages of 50 and 64. More donor organs come from deceased donors, but the percentage of living donors has increased since 1988. Organ transplants include kidney, pancreas, liver, heart, lung, and intestine, with kidney being the most common.
(Source: https://www.webmd.com/a-to-z-guides/organ-transplant-overview#1)

TRADITIONAL ORGAN TRANSPORTATION PROCESS: Once organs have been recovered timing becomes essential for the success of transplantation. Each organ is carefully preserved using special solutions and they're packed on ice for transportation. Most organs travel to the hospital of the waiting recipient, escorted by the recovering surgeon and are then given to the surgeon who will perform the transplant. Some of the potential issues associated with this method of storage and transportation include variability of packaging materials used; bioincompatibility of the material that touches the organ; tissue injury due to movement or vibration; and potential uneven cooling of the organ tissue.
(Source: https://www.donoralliance.org/newsroom/donation-essentials/howorgansaretransportedfortransplant/?cli_action=1608729364.099 and https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4593023/)

NEW TECHNOLOGY: A new technology, called portable hypothermic machine perfusion, circulates a specially formulated, cold-temperature medical solution throughout a donated liver inside a machine pump as it travels from the point of donation to the recipient for transplant surgery. This clinical trial seeks to determine whether machine perfusion improves overall outcomes for transplant recipients. Looking ahead, it is the hope that this may help transplant centers identify more viable livers for transplant and close the gap between supply and demand. "We hope to use this technology to increase the number of organs available for transplantation, while reducing complications and shortening the length of hospital stays," said Diane Alonso, MD, program director of Intermountain Healthcare's Abdominal Transplant Program.
(Source: https://intermountainhealthcare.org/news/2020/03/intermountain-healthcare-surgeons-testing-new-system-to-ensure-organs-are-healthy-during-transport/)

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If this story or any other Ivanhoe story has impacted your life or prompted you or someone you know to seek or change treatments, please let us know by contacting Marjorie Bekaert Thomas at mthomas@ivanhoe.com