Case 1: Suspended Animation

A Pennsylvania hospital will be testing out a new emergency technique in the upcoming months on patients who are dying but not yet dead. The technique will be tested on ten patients who have gone into cardiac arrest after suffering a knife or gunshot wound. Attempts to restart their heart will have failed. The patient's chest will be open and they will likely have lost approximately half of their blood. Their chance of survival will be less than seven percent. At this point, the team of doctors prepared to implement the new technique will be called in.

The patients' blood will be replaced with a cold saline solution that quickly cools the body, stopping almost all cellular activity. The solution will first be pumped into the heart and brain, then into the rest of the body. Within about fifteen minutes, the patient's temperature will drop to 10 degrees Celsius. In this state, cells need less oxygen and doctors have more time (up to two hours) to repair the patients' wounds. After the injuries are treated, the patients will warm back up as the saline solution is replaced with blood.[1] The survival rate of these test patients will be compared to a control group of patients who met the same criteria but were not treated with the new technique.

The technique was developed by Doctor Peter Rhee, who has successfully tested it on pigs. Indeed, in a 2000 study, ninety percent of the pigs who had been suspended were revived—while all of the control group pigs died. Further, the revived pigs did not show any signs of physical or cognitive impairments.[2] As Rhee explains, "If a patient comes to us two hours after dying you can't bring them back to life. . . But if they're dying and you suspend them, you have a chance to bring them back after their structural problems have been fixed."[3]

The technique sounds very promising. But even David King, one of the surgeons that has worked on animal tests and helped prepare the technique for human trials, admits that it is "way, way out there." "The scientist in me would be very careful promising anything for a salvage therapy for the most desperate of all situations. You can't expect miracles," King states.[4]

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[1] Helen Thomson, "Gunshot Victims to be Suspended between Life and Death," NewScientist, March 26, 2014, http://www.newscientist.com/article/mg22129623.000-gunshot-victims-to-be-suspended-between-life-and-death.html#.U0xoQuZdXK0.

[2] Michelle Starr, "Suspended-Animation Trials to Begin on Humans," CNet, May 25, 2014, http://www.cnet.com/news/suspended-animation-trials-to-begin-on-humans/

[3] Mark Prigg, "Left between Life and Death: First 'Suspended Animation' Trials Set to Begin in Bid to Buy Time for Stabbing and Gunshot Victims," Daily Mail, May 26, 2014, http://www.dailymail.co.uk/sciencetech/article-2639752/Left-life-death-First-suspended-animation-trials-set-begin-bid-buy-time-stabbing-gunshot-victims.html

[4] Elizabeth Lopatto, "New 'Suspended Animation' Procedure Saves Lives by Replacing Blood with Cold Electrolyte Solution," The Daily Beast, April 2, 2014,

Due to the nature of this technique and the type of patients needed to test it, it will be impossible to get their informed consent. Requiring consent is important when medical research is performed on human subjects and this standard is typically maintained even in emergency situations.[5] The hospital has attempted to notify the community that the trial is taking place by holding discussion groups and placing advertisements in the newspaper. People are able to opt out online, but no one has done so yet.

Case from the 2014 Regional Ethics Bowl
http://appe.indiana.edu/ethics-bowl/

http://www.thedailybeast.com/articles/2014/04/02/new-suspended-animation-procedure-saves-lives-by-replacing-blood-with-a-cold-electrolyte-solution.html

[5] "Medical Experiments Need Consent—Even in Emergencies," NewScientist, March 27, 2014, http://www.newscientist.com/article/mg22129622.100-medical-experiments-need-consent—even-in-emergency.html#.U0xsheZdXK0