

San Diego to Participate in NIH Project Aimed at Improving Survival from Cardiac Arrest and Severe Trauma

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The University of California, San Diego will lead a five-year countywide research project as part of a major bi-national initiative to improve survival from cardiac arrest and severe trauma.

The effort is spearheaded by the National Institutes of Health and the Canadian Institutes of Health Research through a new partnership called the "Resuscitation Outcomes Consortium," or ROC. The initial funding commitment is \$50 million to support research in 11 regions throughout the U.S. and Canada, including San Diego. The University of Washington in Seattle will serve as the coordinating center.

UCSD has been awarded a \$2.3 million grant to participate in ROC and lead the San Diego component, which will be named the San Diego Resuscitation Research Center. The SDRRC will integrate pre-hospital care providers, trauma centers, and cardiac arrest-receiving hospitals into an organized network to conduct ROC-sponsored studies. The SDRRC will also train paramedics in protocol implementation and support a data system to track patient outcomes.

"Surviving traumatic injury and cardiac arrest is a serious public health issue. Tens of thousands of Americans die each year from sudden cardiac arrest and trauma. The good news is that a growing body of research suggests a significant number of these people can be saved," said Elizabeth G. Nabel, M.D., Director of the National Heart, Lung, and Blood Institute of the NIH, the lead federal sponsor of the research effort.

The U.S./Canadian consortium will support clinical trials and create an extensive and unique database of trauma resuscitation and cardiac arrest information that is expected to expand the understanding of resuscitation and speed the development of new treatments. By studying new and promising drugs, technologies and techniques, researchers hope to identify treatments most likely to benefit the public and improve outcomes for patients who experience cardiac arrest or a traumatic injury. The goal is to decrease mortality, improve cognitive outcomes, and return patients to their prior functional capacity.

Daniel Davis, M.D., from the UCSD Department of Emergency Medicine, is the Principal Investigator for the San Diego ROC site.

"This grant allows a diverse group of researchers across North America to develop new methods to treat cardiac arrest and trauma patients. We have widespread support throughout the County to perform this vital research and identify better ways of addressing these frequently lethal diseases," said Davis. "This will be a wonderful, collaborative effort involving our region's emergency medical services system, hospitals, and EMS agencies. It is an honor to have been selected by the NIH. This project will significantly enhance our ability to deliver cutting-edge care to our citizens and move us closer to our goal of making San Diego America's safest community."

The first ROC study will assess the effectiveness of initial resuscitation of trauma patients with hypertonic fluid, which is a highly concentrated form of saline solution. In the crucial minutes before blood transfusions can be

safely administered in a hospital, paramedics currently give trauma patients intravenous normal saline solution to compensate for blood loss. In this study, trauma patients with signs of shock or severe brain injury will receive one of three saline solutions - normal saline, high concentration (hypertonic) saline alone, or hypertonic saline with dextran, a circulation-enhancing substance.

Hypertonic saline solutions have been used in Europe for several years but are not yet approved by the U.S. Food and Drug Administration. Hypertonic saline solutions are designed to compensate for blood loss more effectively, decrease the harmful inflammatory response to injury, and prevent brain swelling. Encouraging prior research indicates that these beneficial effects shlead to a reduction in organ failure for patients with major blood loss and improve neurological function for patients with brain injury.

The five trauma centers in the San Diego Trauma System will all participate in this study.

Every ROC study undergoes rigorous review and approval. The initial review is done by an independent group of scientists and ethicists at the I. Subsequent review occurs by the FDA as well a state and regional EMS authorities. ROC studies must also be reviewed and approved by the Institutional Review Boards of each of the participating hospitals. Since these trials will address patients in life-threatening situations who are often unconscious, guidelines to govern their safe conduct. Individuals wishing to exempt themselves from enrollment have the option of wearing or carrying a wristband indicating the choice. Wristbands will be provided through the SDRRC and can be obtained by calling 619-543-3829.

The San Diego hypertonic saline study is expected to begin in late summer or early fall. Community forums and other media outreach are being planned throughout the County to invite public discussion. The community's feedback will be assessed by the UCSD Institutional Review Board in determining whether to move forward with the trials.

UCSD and other San Diego hospitals have partnered with San Diego County in several prior important research activities. The San Diego Paramedic Rapid Sequence Intubation Trial (1998-2002) is widely regarded as one of the most important prehospital studies ever performed to determine the optimal management of critical head injury victims.

For additional information and the NIH press release visit the ROC website at roc.uwctc.org or contact Donna Kelly, SDRCC Study Coordinator, at 619-543-3829.

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