Large randomized trial: LUCAS Chest Compression System is effective and reliable in prehospital cardiac arrest

Results from the LINC (LUCAS in Cardiac Arrest) trial shows good outcomes in both LUCAS CPR and manual CPR groups

Redmond, Washington, September 3, 2013 – Physio-Control Inc., the world’s leading provider of professional emergency response solutions, announced today that the main results of the large randomized LINC study which compared the effectiveness of the LUCAS® mechanical chest compression system to high quality manual chest compressions, were presented at the European Society of Cardiology Congress in Amsterdam, the Netherlands. The LINC study showed similar short-term survival rates for LUCAS (23.6%) and manual (23.7%) chest compressions. At 6-months, 8.5% of the patients treated with LUCAS were alive with good neurological outcomes compared to 7.6% in the manual group.

The study provides the highest level of evidence that sudden cardiac arrest patients can be effectively treated using LUCAS mechanical chest compressions. The LUCAS chest compression system provides several additional benefits to resuscitation care:

- Frees rescuers to provide other life-saving therapies without the limitations or difficulties of manual cardiopulmonary resuscitation (CPR)
- Standardizes the quality of chest compressions adhering to the European Resuscitation Council and American Heart Association Guidelines for CPR depth, rate and recoil
- Allows for effective CPR during patient transportation, while improving rescuer safety
- Can provide life-sustaining circulation in the catheterization laboratory during procedures to reopen blocked arteries

The LINC study led and presented by Professor Sten Rubertsson M.D., Ph.D., from Uppsala University, Uppsala, Sweden, included 2,589 out-of-hospital cardiac arrest patients in Europe over five years, from 2008 to 2013. It is one of the largest controlled, envelope randomized trials for out-of-hospital cardiac arrest in history. The patients were randomized to either the LUCAS device receiving mechanical chest compressions with defibrillation provided during ongoing compressions, or to manual chest compressions according to the European Resuscitation Council and American Heart Association Guidelines for CPR.

“The results are encouraging, with the vast majority of survivors having good neurological status at 6 months - 99% in the LUCAS group, 94% in the manual group.” said Professor Rubertsson. “Moreover, the overall survival rate is high considering the study excluded the most viable groups; the patients defibrillated before EMS arrival and EMS witnessed cardiac arrests that were successfully defibrillated with the first shock.”

“This is a landmark study for the LUCAS product. It confirms that LUCAS is safe and effective and that the LUCAS device is reliable and easy to use. Most importantly, the survivors had good neurological outcomes,” said Brian Webster, CEO of Physio-Control. “LUCAS can be implemented to deliver high quality chest compressions while allowing rescuers to focus on other resuscitation interventions and deploying LUCAS can improve the safety of EMS personnel during transport.” LUCAS is a uniquely designed device with respect to the rate and depth of compressions delivered, ease of use, and the manner in which force is exerted on the chest. The combination of these characteristics contribute to device efficacy, therefore the findings of this study may not apply to other chest compression devices.

The LINC study included sudden cardiac arrest patients in six European centers; Uppsala, Gävle, Västerås and Malmö in Sweden, Utrecht in the Netherlands, and Dorset in the UK. Over 770 paramedics at 26 ambulance stations and 1,500 in-hospital employees at 14 hospitals took part in the LINC trial. The study was initiated, designed and partly funded by
Uppsala University, sponsored by Physio-Control, Inc., coordinated independently by Uppsala Clinical Research Center, Uppsala, Sweden, and conducted in accordance to clinical and ethical principles.

**About Sudden Cardiac Arrest and LUCAS Chest Compression System**

Sudden cardiac arrest is one of the most common causes of death in the Western World, and may hit young as well as elderly people, unexpectedly. Uninterrupted and effective chest compression is key for survival and outcomes, but exhausting and difficult to provide consistently and safely manually. The LUCAS Chest Compression System is a medical device that assists emergency care personnel in maintaining life-sustaining blood circulation to the brain and heart in sudden cardiac arrest patients. It provides consistent and effective chest compressions, designed according to the European Resuscitation Council and American Heart Association Guidelines for CPR (cardiopulmonary resuscitation). LUCAS is simple to use, applied within seconds and feasible for use in a majority of cardiac arrest patients in most settings and situations. The mechanical CPR device has shown to maintain blood circulation better than manual CPR, to increase operational efficacy and safety, and to improve the opportunities to save cardiac arrest patients. LUCAS has shown to save lives by allowing for simultaneous percutaneous coronary intervention during CPR or work as a bridge to other therapies. LUCAS was launched in 2003 and is today available in over 40 markets globally.

**About Physio-Control**

Physio-Control, Inc. is headquartered in Redmond, Washington. The company operates in over 100 countries and is the world’s leading provider of professional emergency medical response solutions that predict or intervene in life threatening emergencies. To learn more visit www.physio-control.com, www.facebook.com/physiocontrolinc or follow us on Twitter at @PhysioControl.

**Contacts, for press only:**

Sonia Reid  
sonia.reid@physio-control.com  
+1 (425) 867-4135

In Europe:  
Shaun Wootton, Otto Communications  
shaun@ottomr.co.uk  
+44 020 7812 0609