Swift intervention doubles survival rate from cardiac arrest

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A team of Swedish researchers finds that early cardiopulmonary resuscitation more than doubles the chance of survival for patients suffering out-of-hospital cardiac arrest. The percentage of patients who receive life-saving resuscitation has also increased substantially thanks to

so-called SMS Lifesavers. These results are published simultaneously in two studies in the highly reputed *New England Journal of Medicine*.

The two studies were conducted by researchers at the Center for Resuscitation Science at Karolinska Institutet and Södersjukhuset (Stockholm South General Hospital) in collaboration with University of Borås, Danderyd Hospital and Sahlgrenska Academy, all in Sweden.

"Both these studies clearly show that cardiopulmonary resuscitation is an effective, life-saving treatment, and that further encouragement must be given to respond swiftly on suspected cardiac arrest," says Dr Jacob Hollenberg, Cardiologist and Head of Research at the Center for Resuscitation Science.

In one of the two articles, the researchers have analysed over 30,000 cases of out-of-hospital cardiac arrest in Sweden. The results show that cardiopulmonary resuscitation performed before the arrival of the ambulance is associated with over a two-fold increase in the chance of survival. This powerful effect is independent of age, sex, place, cause, ECG pattern, and time period. According to the researchers, this study unique in several ways. Aside from its main results, is the number of cases analysed, the fact that data is reproducible for three decades and that the material was subjected to thorough correction for sources of error and bias.

In the other article, the researchers have evaluated a new method of dispatching CPR trained volunteers, known as SMS Lifesavers to cardiac arrests. Their results show that these volunteers have caused a 30 % increase in the number of patients who receive cardiopulmonary resuscitation before the arrival of paramedics, the rescue services or the police. The study involved 10,000 civilian volunteers in Stockholm County who were alerted by mobile phone text message to the cardiac arrest in order to administer cardiopulmonary resuscitation if they were

within a range of 500 metres.

"Traditional methods such as mass public training, which are now used throughout the world, are important but have not shown any evidence of a similar increase," says Dr Hollenberg. "The new mobile phone text-message alert system shows convincingly that new technology can be used to ensure that more people receive life-saving treatment as they wait for an ambulance."

Facts about cardiac arrest:

• About 10,000 Swedes suffer out-of-hospital cardiac arrest every year. In the USA, more than 300 000 persons suffer out-of-hospital cardiac arrest each year.
• Only 1 in 10 victims survive.
• Cardiac arrest is often caused by acute myocardial infarction.
• The delay between onset and treatment in the form of cardiopulmonary resuscitation and defibrillation is decisive for survival.
• More than 3 Million Swedes (out of a population of 10 Million inhabitants) have been trained in CPR

More information: ' Early Cardiopulmonary Resuscitation in Out-of-Hospital Cardiac Arrest ', Ingela Hasselqvist-Ax, Gabriel Riva, Johan Herlitz, Marten Rosenqvist, Jacob Hollenberg, Per Nordberg, Mattias Ringh, Martin Jonsson, Christer Axelsson, Jonny Lindqvist, Thomas Karlsson, and Leif Svensson, *NEJM* , 2015; 372:2307-15, online 11 June 2015, DOI: 10.1056/NEJMoa1405796

' Mobile-Phone Dispatch of Laypersons for CPR in Out-of- Hospital Cardiac Arrest ', Mattias Ringh, Mårten Rosenqvist, Jacob Hollenberg, Martin Jonsson, David Fredman, Per Nordberg, Hans Järnbert-Pettersson, Ingela Hasselqvist-Ax, Gabriel Riva, and Leif Svensson, *NEJM* , 2015; 372:2316-25, online 11 June 2015, DOI:

10.1056/NEJMoa1406038