

Sharp decrease in deaths from sudden cardiac arrest

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Only a few decades ago, sudden cardiac arrest was a death sentence. Today, a victim of sudden cardiac arrest is saved roughly once every six hours in Sweden, reveals a thesis from the Sahlgrenska Academy at the University of Gothenburg, Sweden, reviewing all cases of sudden cardiac arrest over a 30-year period.

Recent decades have brought enormous advances in the treatment of victims of sudden cardiac arrest, shows a thesis from the University of Gothenburg's Sahlgrenska Academy which looks at 3,871 cases in Gothenburg both inside and outside [hospital](#) between 1980 and 2009.

Unique study

The thesis, in which [doctoral student](#) and registered physician Martin Fredriksson investigates both how patients were dealt with and with what outcome, includes several different studies, including three articles providing the first systematic and in-depth analysis of cardiac arrest inside hospital in Sweden. The [uniqueness](#) in the thesis is a comparative study of the same population, comparing both in-hospital and out-of-hospital cardiac arrest in the same background population, which is unique and has never been done before.

Defibrillators save many

A total of 1,115 people suffered cardiac arrest at Sahlgrenska University

Hospital between 1994 and 2002, of whom 37% survived, and 86% of those were still alive a year later. For patients who could be treated with a [defibrillator](#), the chances of surviving sudden cardiac arrest were three times higher inside hospital than outside hospital.

Longer time to treatment outside hospital

For those who could not be treated with a defibrillator, [survival](#) was seven times higher among those in hospital. The difference is partly because it takes much longer to start defibrillation outside hospital.

"Other factors also play a role, though," says Dr Fredriksson. "For example, most patients in hospital have a type of cardiac arrest that can be treated with a defibrillator, and the quality of CPR is better in hospital where victims can quickly be given highly advanced care."

More victims outside hospital now survive

The number of people surviving cardiac arrest outside hospital has nevertheless increased over the past decade. "This is probably due to several factors, including the introduction of mechanical chest compression, but CPR by bystanders is also becoming more common, and follow-up care in hospital has improved."

9% fully survive

Of the 3,871 cases of sudden cardiac arrest reviewed, 8.8% of victims survived and could be discharged from hospital. In the subgroup of patients suffering from ventricular fibrillation, which is the kind of [cardiac arrest](#) that can be treated with a defibrillator, one in five patients could be discharged.

Sudden cardiac arrest is where the heart stops pumping, causing the victim to lose consciousness and show no signs of life. In many cases, a heart attack causes the heart to lose its normal rhythm, known as ventricular fibrillation. For the victim to survive, the heart's rhythm needs to be restored within minutes. The risk of death increases by the minute until treatment commences, so a rapid response in the form of cardiopulmonary resuscitation (CPR) and defibrillation is vital.

Provided by University of Gothenburg

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