



## Quality of Care and Outcomes Assessment

### IMPROVED SURVIVAL AND INCREASE IN BYSTANDER CARDIOPULMONARY RESUSCITATION AFTER OUT-OF-HOSPITAL CARDIAC ARREST: A NATIONWIDE COHORT STUDY 2001-2010

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**Background:** Out-of-Hospital Cardiac Arrest (OHCA) is a major health problem with poor prognosis. To improve the future handling of OHCA, we examined characteristics of OHCA, including survival.

**Methods:** Patients with OHCA were identified in the nationwide Danish Cardiac Arrest Register and Copenhagen Mobile Emergency Care Unit from June 2001-December 2010. Temporal trends were tested using Mann-Whitney U test. OR 's for 30-day survival with selected predictors were estimated using logistic regression adjusted for age and gender.

**Results:** A total of 29,431 patients with OHCA were included, mean age was 67.8 years (SD  $\pm$  16.4) and 65.3 % were males. Overall we identified improving temporal trends in 30 day survival, return of spontaneous circulation (ROSC), and CPR before ambulance arrival; but no clear trend for shockable rhythm was observed (Figure). We found an increase in witnessed collapse (from 46.7 % in 2001 to 52.2 % in 2010,  $p < 0.001$ ). Only a small number were treated with an automated external defibrillator (AED) before arrival of ambulance (1.35 % in 2001 and 1.62 % in 2010,  $p = 0.21$ ). Overall, CPR (OR 3.56, CI 3.20-3.95) and defibrillation before ambulance arrival (OR 4.40, CI 3.32-5.83) were associated with an improved 30-day survival.

**Conclusion:** During a 10 year period there was a significant increase in bystander CPR and survival. However, AED use before ambulance arrival remained limited. These results emphasize the importance of early resuscitation by bystander as well as implementation of public AEDs.

