

# Abstract 158: No-Flow-Fraction, ROSC, and Discharge Rate in In-Hospital Resuscitations Before and After the 2010 Guidelines

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## Abstract

**Introduction:** The 2010 resuscitation guidelines strongly emphasize the reduction of time without chest compressions. The no-flow-fraction (NFF) is defined as time without chest compressions divided by the total time without spontaneous circulation. For out-of-hospital cardiac arrests treated by emergency medical services this fraction ranges between 0.48 and 0.6. For in-hospital cardiac arrest (IHCA) even a NFF of 0.24 is achievable. In this study we analyzed how the NFF during in-hospital resuscitation given by standard care personnel changed after publication of the 2010 guidelines.

**Materials and Methods:** At the University Hospital Carl Gustav Carus Dresden 70 automated external defibrillators (AED) have been set up all over the campus. These AEDs (LifePak 1000, Physio-Control, Redmond, Washington/US) are capable to record time and chest compressions during cardiac resuscitation (no-flow time: interruption of chest compression > 1.5 s). Since 2006 all employees have been encouraged to attend a 90 minutes basic life support (BLS) training every year. This implies that most of the staff is aware of the actual guidelines.

Between 2008 and 2012 the medical emergency team was called 119 times due to cardiac arrests occurring at standard care wards. The IHCA cases between 2008 and 2010 were compared with the cases in 2011 and 2012.

**Results:** An AED was attached by the BLS caregivers in 65 cases (55%). From these 65 cases NFF was available in 57 cases. The median NFF decreased from 0.45 (25-75-percentiles 0.37-0.53; n=26) to 0.35 (25-75-percentiles 0.26-0.40; n=31),  $p < 0.01$ . The average chest compression rate (CCR) remained stable: median 116 (25-75-percentiles 104 - 126) to 115 (25-75-percentiles 98 - 131). The rate of patients achieving return of spontaneous circulation (ROSC)

increased from 51.9% to 72.1% ( $p < 0.03$ ; Chi-Square), the rate of hospital discharge increased from 20% to 35% but did not reach statistical significance.

**Conclusions:** Continuous education of healthcare professionals in basic life support with focus on the avoidance of unnecessary interruptions of chest compression seems to improve performance in resuscitation. This may have an impact on the rate of ROSC and survival after cardiac arrest.