**Low dose-high frequency cardiopulmonary resuscitation retraining in health care professionals - a pilot study**

**Background:** Survival after in-hospital cardiac arrest varies markedly between hospitals. High-quality cardiopulmonary resuscitation (CPR) remains essential to improving outcomes.

It is known that CPR skills deteriorate within months after training, therefore annual retraining strategies may not be frequent enough. Optimal intervals are not known, but some evidence indicate that “low dose–high frequency” retraining may be beneficial.

Practical training reduces concern at making mistakes, as well as increases self-reported confidence, the so called self-efficacy

It is known that an individuals self-efficacy may affect their performance.

**Aim:** The primary aim was to assess if “low dose-high frequency" training increases health care professionals´ practical CPR skills. A second aim was to investigate if the training affected an individuals´ beliefs about his or her ability to perform CPR, self-efficay.

**Methods:** Health care professionals (n=67) from the emergency ward, Motala hospital, Östergötland, Sweden were included in an intervention group and were encouraged to retrain CPR two minutes every work-shift for four weeks. In addition they received feed-back from a skill reporter. Measurement of CPR skills with a pre- and post-test without feedback.

A control group of health care professionals (n=21) from the geriatric emergency ward at the same hospital did only the pre-and post-test without feedback and no training intervention.

Primary endpoint was the overall total score of the practical skill test. Secondary endpoints were individual variables such as: quality of compressions; depth, rate, count, complete release and correct hand position, of ventilations; volume and count, and CPR continuity measured as hands-off time.

For skill measurement and feedback training we used Laerdals Resusci Anne QCPR and SimPad SkillReporter.

A result of 75% overall score was considered approved.

Self-efficacy was assessed by a questionnaire before pretest and after posttest.

**Results:** There was no significant difference between the intervention- and control group in the overall median score before retraining intervention (46% vs 41% p= 0.74). After four weeks of low-dose high-frequency retraining the intervention group had a significantly higher overall median score (92% vs 58%, p=<0.001). The intervention group had also significantly improved, compared to the control group, in the following variables: compression; depth, rate and count, correct hand position and ventilation count.
The intervention group experienced significantly better self-reported knowledge about CPR after training (p=<0.001).

**Conclusions** : “Low dose-high frequency” retraining with a standardised CPR feedback system is a simple and effective way to improve CPR quality. In addition, the intervention group experienced a higher level of self-efficacy after training .