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**Question:** Resuscitation teams with a CPR Coach compared to Resuscitation teams without a CPR Coach for treatment of cardiac arrest patients

**Setting: Any setting**

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| **Certainty assessment** | **Impact** | **Certainty** | **Importance** |
| --- | --- | --- | --- |
| **№ of studies** | **Study design** | **Risk of bias** | **Inconsistency** | **Indirectness** | **Imprecision** | **Other considerations** |
| **Clinical CPR performance** |
| 1a | non-randomised studies | very seriousb | not serious | seriousc | very seriousd | all plausible residual confounding would suggest spurious effect, while no effect was observed | Infinger 2014 found that implementation of a CPR Coach improved fraction of compressions at adequate depth from 69.8% to 80.4%; compression depth increased from 43.6mm to 47.2mm, and time to defibrillation was reduced from 13.2s to 7.2s. P-values or confidence intervals for comparisons not reported. | ⨁◯◯◯Very lowb,c,d | CRITICAL |
| **CPR performance in simulation** |
| 3 | randomised trials | very seriousa | not serious | not serious | very seriouse | all plausible residual confounding would suggest spurious effect, while no effect was observed | Cheng 2018 found higher fraction of excellent chest compressions (63% vs 31%, Diff: 31.8 (17.7, 45.9); higher fraction of compressions within guideline recommendations 38.0 vs. 69.5, Diff: 31.5 (15.7, 47.4); guideline compliant rate (88% vs 80%, p=0.07); CCF (82% vs 77%, p=0.04) for coached vs non-coached teams. Kessler 2021 found shorter overall pause durations for coached vs non-coached teams 98.6 s vs 120.85 s, diff: 0.6–43.9 s, shorter pauses for intubation and defibrillation with no significant difference in mean pause frequency. Badke 2020 found shorter time to backboard placement (22s vs. 55s, p=0.02); no difference in compression rate, no flow time, time to first epi, time to first shock, or perishock pause duration. e | ⨁◯◯◯Very lowa,e | IMPORTANT |
| **Guideline adherence in simulation** |
| 1 | randomised trials | seriousf | not serious | seriousg | seriousd | all plausible residual confounding would suggest spurious effect, while no effect was observed | Buyck 2021 measured a clinical performance tool for teams with vs. without a CPR coach. They found that scores were 73.4 for CPR coached teams vs 68.3 for non-coached teams, (difference: 5.2 points; 95% CI: 1.0-9.3; p=0.016)  | ⨁⨁◯◯Lowd,f,g | IMPORTANT |
| **Teamwork in simulation** |
| 1 | randomised trials | serioush | not serious | seriousi | very seriousj | all plausible residual confounding would suggest spurious effect, while no effect was observed | Jones 2021 found that CPR coached teams had more words/min compared to non-coached teams (160vs134; p<0.05) overall; team leaders and others said less/min (70.2 vs 88.4 and 30.4 vs 45.6, p<0,05), and total questions/min was lower (2.84 vs 3.66, p<0,05).  | ⨁◯◯◯Very lowh,i,j | IMPORTANT |
| **Workload in simulation** |
| 2 | randomised trials | very seriousk | seriousl | not serious | seriousm | all plausible residual confounding would suggest spurious effect, while no effect was observed | Tofil 2020 found that workload for team leaders measured using the NASA TLX questionnaire was 54.1 (9.8) vs 52.7 (11.6) for teams without vs with a coach, difference: 1.4 (–5.5 to 8.3). There was also no difference for chest compressors: 55.2 (11.2) vs. 55.6 (9.1), diff: 0.4 (–4.9 to 4.2). For chest compressors, there was lower mental demand and higher physical demand for coached teams vs non-coached teams. Badke 2020 found no significant differences on any subscales of the NASA TLX for team leaders between the coached vs. non-coached teams. No overall NASA TLX measurement was conducted. | ⨁◯◯◯Very lowk,l,m | IMPORTANT |

**CI:** confidence interval

#### Explanations

a. High risk of bias for Badke 2020 and Kessler 2021 with some concerns for Cheng 2018.

b. One before-after observational study without an external comparator.

c. Intervention included a CPR Coach but also training and optimization of team ergnonomics

d. Only one study with uncertainty of the confidence intervals

e. Evidence stems from 2 trials only of which Badke 2020 is a very small study finding no significant differences in several outcomes which may be due to an underpowered study design.

f. risk of bias in outcome assessment

g. Measured using the clinical performance tool, which is a tool to assess CPR performance in simulated settings (a proxy for guideline adherence).

h. Some concerns in risk of bias rated for this study.

i. Teamwork only assessed as number of words with no outcome measures of e.g. leadership, perceived communication effectiveness or task allocation.

j. Evidence from one study only not reporting confidence intervals for the outcomes.

k. High risk of bias rated for both studies

l. Although both studies showed comparable between-group results, there was unexplained and very large differences in the level of workload when looking at the two studies.

m. Evidence from two studies with one of them being very small and underpowered to show differences in outcomes.