

Digital Scoring System for Assessment of Infant Cardiopulmonary Resuscitation Techniques

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This paper describes a system that evaluates performance for infant cardiopulmonary resuscitation (CPR) with digital scores. In contrast to the previous studies for CPR performance assessment, which required both mechanical recording-based and checklist-based evaluation, the comprehensive and objective assessment are available with the proposed system as it affords every basic life support (BLS) evaluation components specified in the latest guidelines from American Heart Association (AHA). The evaluation index applied to the system was further supplemented by emergency physicians certified in BLS to provide reliability. The system was validated by experiments where subjects were composed of 24 beginners in first aid and 16 experts certified in BLS. Both two-finger (TF) CPR and two-thumb (TT) CPR was examined, and experts' scores turned out to be significantly higher than those of beginners in both techniques. The adequacy of the system for practical use was further confirmed as experimental outcome supported the previously accepted infant CPR methodology. The system would act as an essential infant CPR assessment tool in the related studies, and may also be used as a first aid training tool for infant CPR.

References

- [1] "Highlights of the 2010 American Heart Association Guidelines for CPR and ECC," M. F. Hazinski, ed., 2010.