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**London Ambulance – HP-CPR (Peds)**

# Out-of-hospital Pediatric Cardiac Arrest Checklist: London Ambulance Service NHS Trust, London, United Kingdom

## **BRIEF BACKGROUND**

For pre-hospital clinicians, pediatric cardiac arrest is a rare yet highly stressful and emotive event. Outcomes from cardiac arrest in children are often poor, with survival around just 10%. For those who survive, many have unfavorable neurological outcomes. Ongoing education, including simulation, is often limited for clinicians to refresh and hone their skills in pediatric resuscitation. However, recent studies have shown that with a targeted approach to education and on-scene clinical care, outcomes are improving.

## **STEPS TAKEN**

In March 2019, the pediatric cardiac arrest checklist (created by Keir Rutherford and Jo Nevett) was introduced across the London Ambulance Service NHS Trusts to support pre-hospital clinicians in delivering high-quality resuscitation to children in cardiac arrest. Checklists allow for cognitive offloading, ensuring that correct procedures are followed, crucial interventions are undertaken and shared mental models are established among the team.

The checklist developed from ongoing work by the London Ambulance Service, Advanced Paramedic Practitioner, Critical Care (APP-CC) system, aiming to highlight and improve pediatric pre-hospital resuscitation in London. In 2017, a review was undertaken by APP-CC clinicians of all pediatric cardiac arrest patients in London between 2014-2017. The findings allowed a focused approach to adjust areas that required improvement either through education; updating the clinical resource dispatch model to ensure senior clinicians attend all pediatric cardiac arrests; or through updating the NHS Ambulance Trusts and APP-CC clinical guidelines and standard operating procedures. It also identified points to include in the checklist (e.g. the use of orogastric tubes and the metronome to increase compliance of use).

Once created, the checklist provided a simple step-by-step approach to cardiac arrest management — from a visual aid memoir guiding optimal airway positioning, to post-return of spontaneous circulation care and a handover template. Each step is considered crucial in delivering high-quality resuscitation. The checklist is being placed in the pediatric advanced life support kit carried on all frontline ambulances and response cars. It will also be available to download onto clinicians' work-issued iPads.

## **CHALLENGES**

The buy-in process proved difficult, regarding the checklist's adoption by clinicians and incorporation into clinical practice.

## RESULTS

The checklist design was shared with all NHS Ambulance Trusts in the United Kingdom, with some having already adopted it. It is too early to surmise its impact on improving survival outcome. However, it has already created an ongoing discussion on the management of children in cardiac arrest, raising significant interest both nationally and internationally.

## OUTLOOK

The checklist is only part of the process in an ongoing project. The future focus will hone in on developing training and educating staff throughout the NHS Ambulance Trusts, and reviewing methods of delivering airway management. Following the first year of implementation and feedback, the checklist will be evaluated and updated. The ultimate goal is to improve survival outcomes for pediatric cardiac arrest patients, not only in London, but across the world.

## CONTACT

Keir Rutherford: [keir.rutherford@lond-amb.nhs.uk](mailto:keir.rutherford@lond-amb.nhs.uk)

