

May 1, 2019

Re: Vancouver ECPR Protocol Adjustment- Phase 3

To: All Primary Care Paramedics, Advanced Care Paramedics, and Paramedic Specialists practicing in Vancouver or North Vancouver

Thank you for your participation in our ECPR protocol for cardiac arrest. We appreciate the keen interest in the protocol and the dedication to innovative cardiac arrest care. Our results thus far have been promising among those with initial VF rhythms, with 3/12 survivors. Among those with non-shockable rhythms however (n=13) we have yet to secure a survivor. For this reason we have modified our inclusion criteria to exclude those with non-shockable initial rhythms unless they demonstrate “signs of life with CPR”.

“Signs of life with CPR” have been found to predictive of favourable neurological status at hospital discharge. “Signs of life” is defined as moving with CPR or pupils ≤ 5 mm. We will be handing out pupil measurement devices soon to assist with this. Until then please use existing measurement techniques. For non-shockable initial rhythms, these signs need to be ongoing until the time of ECMO initiation.

Our protocol time limit for the interval from dispatch to arrival at St. Paul’s Hospital will remain at 50 minutes. However, we have indicated that our *goal time* is <40 minutes. It takes the SPH ECPR team about 20 minutes to initiate ECMO. Almost all ECPR-treated survivors achieve a dispatch-to-ECMO interval of < 60 minutes. Thus, acknowledging that this is a very difficult task, for us to succeed it is highly beneficial for patient arrival to be < 40 minutes. For EMS-witnessed arrests please use the arrest time (instead of dispatch), and for those with periods of ROSC, these durations can be subtracted from the total time.

There has been confusion regarding arrests that are hypothermic (T<32 degrees). We typically treat these patients regardless of other patient characteristics. For this reason we have removed mention of hypothermia from the criteria, and included a note at the bottom to call for all hypothermic cases.

Finally, in order to avoid initiating ECPR on those who will never survive, we have started analyzing an arterial blood sample as soon as the patient arrives. If there are results incompatible with life (PaO₂ < 50 or lactate > 18), then we will not start ECPR. This will exclude a very small number of patients.

Thank you for accommodating the changes to this continuously evolving protocol! Please send any comments or questions to myself or the paramedic ECPR protocol champions. Please join our ECPR Facebook group at <https://www.facebook.com/groups/BCECPR/>

Thank you!

Brian Grunau (representing all of those who have contributed to the ECPR protocol)
Clinical Assistant Professor, UBC Department of Emergency Medicine
Scientist, Centre for Health Evaluation & Outcome Sciences
Brian.Grunau2@vch.ca