Introduction:
Oxygen delivery has a fundamental role in out-of-hospital cardiac arrest (OHCA) management and achieving recommended SatO2 levels in the prehospital phase is elusive. Often times, it exceeds physiological levels in order to avoid insufficient oxygenation[1].
Hyperoxia has been associated with increased in-hospital mortality, though uncertainty remains about this association. Multiwave pulse co-oximetry has safely been studied intraoperatively as a guide to monitor hyper- and hypoxia by calculating an oxygen reserve index (ORI) which could add information to pulse oximetry measures when SpO2 is >98%[2].

Methods:
This is a monocentric prospective study including 12 patients with successful resuscitation following OHCA. The aim of our study is to evaluate the feasibility and assess the availability of novel non invasive oxygen and hemodynamic variables. Collected data principally concern blood oxygen and circulation such as ORI, SpO2, total Hb, perfusion index and pulse rates. Recording is ideally started at time of ROSC.

Results:
We monitored 12 consecutive patients for a total time of 456.8 min during transport from OHCA place to the ER. SpO2 signal was present for 82.3% of transport time. Oxygen Reserve Index signal was present for 58.5% of the total transport time. Pleth variability index (PVI) signal was present 59.8% of the total transport time. SpHb signal was present 44.7% of total time from ROSC to hospital. The confidence interval for each variable is given in Fig. 1.

Conclusion:
Our pilot study shows that noninvasive measurements of hyperoxia, fluid responsiveness and hemoglobin are readily available from the prehospital phase of post-ROSC care allowing for early tailored and goal directed interventions.

References:
Mean ± SD time percentage of signal capture from ROSC to hospital admission during total time for each variable