Introduction:
The HEART (based on History, ECG, Age, Risk Factors, Troponin) score is a valid tool to stratify the ACS in chest pain. But some reports suggest that its reliability could be low for heterogeneity in the assignment due to the subjective interpretation of the History. We used the Chest Pain Score for the “History”. In this study we compare the reliability of the new HEARTCPS and original HEART.

Methods:
This is a multicenter retrospective study conducted in 3 Italian ED between July and October 2019 using clinical scenarios. Ten physicians were included after a course on HEART and HEARTCPS score. We used 53 scenarios which included clinical and demographic data. Each participant independently assigned scores to the scenarios using the HEART and HEARTCPS. We tested the interrater agreement using the kappa-statistic (k), the confidence intervals are bias corrected; we used Stata/SE 14.2 statistical software. A p-value of <0.05 defines statistical significance.

Results:
The overall inter-rater reliability was good for HEART and HEARTCPS: Kappa = 0.63 (CI 95%; 0.57–0.72) and 0.65 (CI95%; 0.63 - 0.67); with good agreement among all the class of risk for HEARTCPS but moderate in the medium class for HEART.
We found significant differences of inter-rater reliability among the senior and junior physicians who used the HEARTCPS: K = 0.56 (CI95%; 0.52–0.57) and 0.75 (CI95%; 0.70-0.79). HEARTCPS score increased its History inter-rater reliability specially among the junior physicians from K = 0.35 (CI 95%; 0.27-0.43) to k = 0.69 (CI 95%; 0.62-0.71). The Junior physicians seem to be more reliable than senior with the HEARTCPS: k = 0.75 (0.71-0.79) vs K = 0.56 (CI95%; 0.52-0.57).

Conclusion:
The HEARTCPS showed inter-rater reliability better than original HEART among the medium class of risk and the junior group. It could be proposed to young doctors to stratify the ACS risk of chest pain. Limit: we used scenarios rather than real patients.