INTRODUCTION
The main objective of this study is to compare emergency medical dispatch (EMD) stroke identification with hospital-confirmed stroke. The secondary objective is to compare the results of stroke diagnostic tool (SDxT) of Medical Priority Dispatch System™ (MPDS®) with National Institutes of Health Stroke Scale (NIHSS) used in hospital by neurologists.

METHODS
Data utilized for the observational study were taken from a preliminary stroke dataset collected at San Martino Hospital (Genova) between January 2016 and June 2017. All cases of suspected stroke arrived at First Aid of San Martino Hospital began part of the study. The dataset includes pre-hospital and in-hospital information: time of call, chief complaint, level of evidence of SDxT, onset, time of arrival at the hospital, confirmation of the stroke by the neurologist, NIH upon arrival and other information on the patient’s in-hospital route. At the time of collection information MPDS® 12.1 version was used. EMS of Genova (Italy) isn’t ACE center and the calls included in the study have not been reviewed. The Stroke Genova Network is summarized schematically in Figure 1.

RESULTS
From 438 suspected stroke included in registry, 353 cases (80.6%) called the EMS. The patients who called EMS had an initial NIH of 10.9 (5.3 for self-presentation at first aid, 14.9 for for transfers from another hospital). From these, 205 (58.1%) were identified by the EMD as suspected stroke; in the remaining 106 cases (Fig.2) the suspicion of stroke was posed by ambulance rescuers (in 42 cases the Chief Complaint was missing at dispatch). SDxT was used in 129 cases: 5 no evidence, 87 partial evidence, 5 strong evidence and 32 clear evidence; in 76 cases SDxT has not been used or completed. The onset was classified as follows: less than 4 hours 114 cases (55.6%), between 4 and 6 hours 8 cases (3.9%), more than 6 hours 18 cases (8.8%), unknown 65 cases (31.7%). Matching this information 46.5% of patients has a partial evidence of stroke and an onset of less than 4 hours. The neurologist at the hospital confirmed 234 cases out of 311 (75.3%): of these 91.0% (n=213) was ischemic and 8.0% (n=21) was hemorrhagic. The NIHSS was related to the SDxT: there were no significant results comparing groups with partial evidence versus strong/clear evidence (NIH score (95%CI): 9.73(7.43 – 12.03) vs 10.85 (7.33 – 14.36), respectively) (Fig.3). Furthermore, the time between the onset of symptoms and the first contact with the neurologist is significantly lower when EMS is activated (139.3 vs 188.3; p = 0.004).

DISCUSSION
The results show a good ability of EMDs to identify stroke patients. Nonetheless, the results obtained demonstrate the key role in the “face to face” evaluation of rescuers. It’s interesting, and in accordance with what was noted by L. Gardette et al. (2017, Annals of Emergency Dispatch & Response), which falls (17), sick person (26) and unconscious /fainting (31) are most used chief complaints in patients with unidentified stroke during the call. In addition, access to the hospital via EMS guarantees an improvement of the first neurological contact and, presumably, also access to definitive therapies.

CONCLUSION
The correlation between SDxT and NIHSS would seem to be useful for telephone screening of patients with NIHSS > 10 but this study is inconclusive for this topic.

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