INTRODUCTION

A fast response to an emergency call is one of the main objectives of an emergency medical communication centers (EMCCs). In 2011 the MPDS®, was implemented in the Liguria Region EMCCs to manage emergency medical calls. The primary objective of the study was to evaluate whether or not the use of the MPDS has reduced the RD. The secondary objective was to evaluate the change in the DEC after the implementation of the MPDS.

METHODS

The retrospective study analyzed the emergency medical calls that were received by the five Liguria EMCCs, from 2010 to 2015. The analysis on the response delay (RD) was performed taking into account all the calls received from the EMCCs in the period of interest, i.e. 712,798 calls. The analysis of the calls duration were performed on distress calls (i.e. the calls linked to a potentially critical situation and so excluding all the others calls as requests of information and so on), with a result of 348,187 observations. The outliers, identified trough the median absolute deviation method, were excluded from both the study samples. The nonparametric Mann-Whitney U-test was used to assess differences between two independent study groups: WO-MPDS (without MPDS) versus W-MPDS (with MPDS).

RESULTS

Of the 712,520 calls handled by the regional EMCCs, pre- and post-MPDS implementation, 291,990 (41%) were excluded as outliers (the outliers are identified by applying the MAD (median absolute deviation) method). After analyzing the remaining 292,468 cases (WO-MPDS: 55,962 calls vs. W-MPDS: 364,568 calls) from all the EMCCs, it was discovered that the median response delay is faster after introducing the MPDS (7.3 sec WO-MPDS vs 6.2 sec W-MPDS). A statistically significant difference was observed between the mean response delay for WO-MPDS and W-MPDS (mean (99%CI): 99.6 (99.5-99.8) and 69.6 (69.4-69.8), respectively). Additionally, the study showed that “red code” calls have a longer mean DEC compared to the “green code” calls (104.6 vs 98.4). That is because with a “red code” call, often the EMD has to provide pre-arrival instructions or needs to stay on line until help arrives.

DISCUSSION & CONCLUSION

Implementation of the MPDS significantly reduced the response delay (i.e., time from when the call rings and when emergency medical dispatcher [EMD] picks it up) time in Liguria EMCCs. The duration of the distress calls (i.e., time from call pick up and to when the case is closed) instead increased heterogeneously with respect to the priority dispatch. However, further research should establish other potential benefits of MPDS implementation such as standardized, quality, and quantity of data gathered.