

# The 2017 freezing rain in Milan: impact on the regional ambulance services and emergency departments.

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Argomento: Trauma e arresto cardiaco

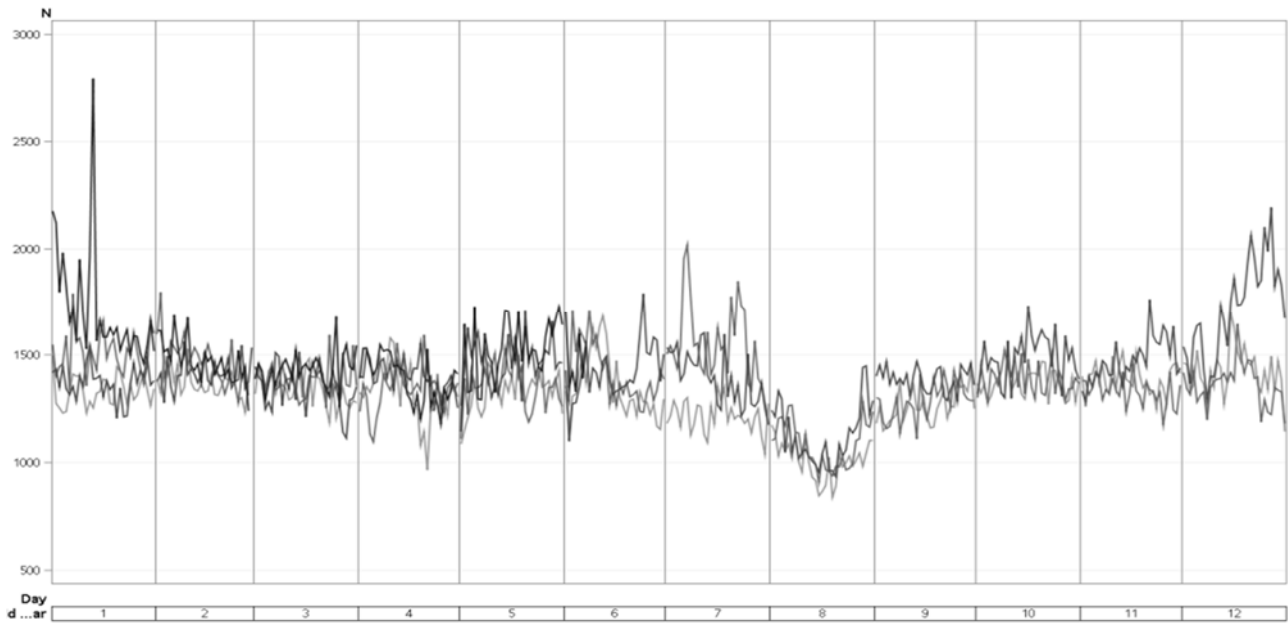
**Background.** Freezing rain is an and unpredictable weather phenomenon which can potentially affect the healthcare system of a large area, with an impact on millions of citizens.

**Objective.** To report on the extensive overload of the emergency system during a freezing rain event which occurred in Lombardy, a region in northern Italy with Milan as capital, on January 13<sup>th</sup> 2017.

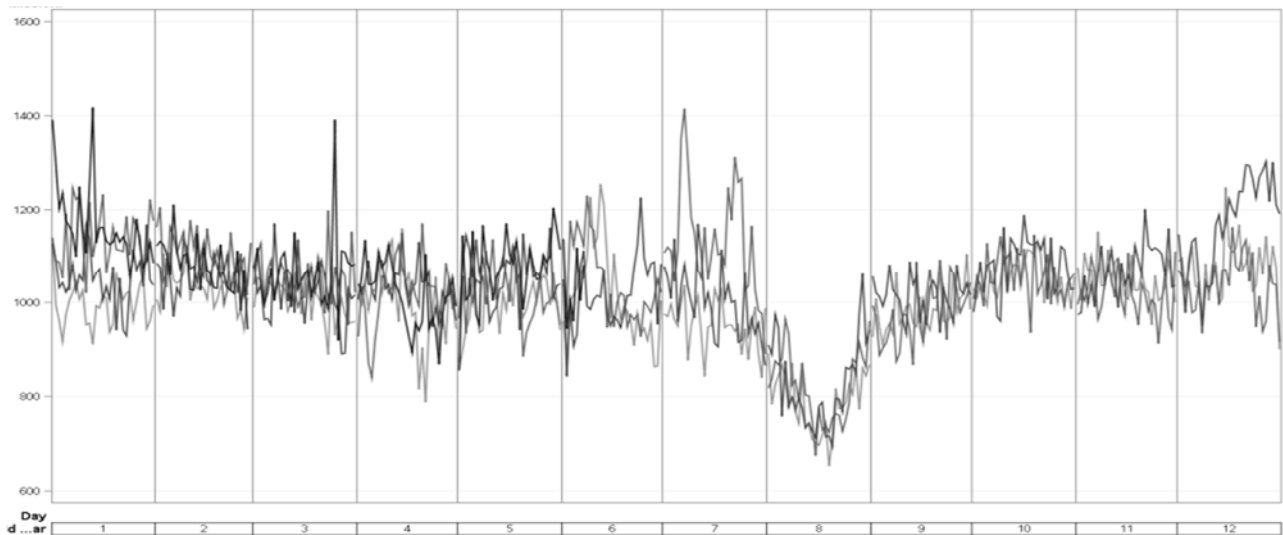
**Methods.** Data on emergency calls and missions of emergency vehicles were obtained from the emergency service official reports (i.e. Azienda Regionale Emergenza e Urgenza, AREU). Data on emergency examinations were made available by the regional authority: overall visits, severity and diagnosis were collected. A burden index was reported to evidence the workload forced on emergency departments (ED).

**Results.** Of the four Lombardy Region areas covered by the AREU and encompassing 117 EDs, the Metropolitan Area around the city of Milan (MM) suffered the worst. Emergency calls and missions peaked on the day of the event, an increase unseen in the previous four years of service. ED admissions increased by 45% and they were mostly due to traumas occurring on the road or at work, of low to moderate severity. More than 70% of the 38 EDs in the MM proved to be overloaded. On January 13<sup>th</sup> 2017, more than 1400 missions were dispatched in the same area. Notably, the other peaks in the chart were registered on March 2017, in coincidence with the Pope's visit to Milan, and on July 2015, when an exceptional heat wave hit the city.

**Conclusions.** We presented the first European report on the impact of an ice storm on a healthcare system. Early alert of population and healthcare professionals should be considered in coincidence with freezing rain events to prevent a dangerous overload of the emergency system.



**Fig 1.** Emergency Calls in the Metropolitan Area of Milan (38 EDs, covering a population of 4,099,521 between January 1st 2014 and May 31st 2017, showing a peak on January 13th 2017. The drop in the number of emergency calls during the month of August is due to the habitual summer holiday period in Italy



**Fig 2** Emergency Missions in the Metropolitan Area (38 EDs, covering a population of 4,099,521) between January 1st 2014 and May 31st 2017, showing a peak on January 13th 2017 (freezing rain), March 2017 (the Pope visit to Milan) and July 2015 (heat wave) The drop in emergency missions during the months of August is due to the habitual summer holiday period in Italy.