

Emergency Medical Services Activation for Anaphylaxis During the COVID-19 Pandemic: A Retrospective Study from Israel

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Background:

Emergency Medical Services (EMS) has shouldered one of healthcare's largest burdens during the Covid-19 pandemic. During the first Covid-19 waves in 2020 and 2021, most EMS services worldwide experienced a general decrease in activation. The Israeli EMS system specifically noted a decrease in cardiovascular, pneumonia, and traumatic injury dispatches but an increase in call activation for mental health/psychiatric emergencies during the pandemic versus prior years.

Objective:

The objective of this study is to determine if there was a change in numbers of EMS calls for anaphylaxis and prehospital EpiPen use during the COVID-19 pandemic.

Methods:

This retrospective comparative study assessed data regarding daily emergency calls within Israel for the code "anaphylaxis" between January 1, 2019 through December 31, 2019 (prepandemic period) versus January 1, 2020 through December 31, 2020 (pandemic period). Information that was analyzed

included age and use of an EpiPen. All data was obtained by the command-and-control database used by MDA.

Results:

During the study period, there was a total of 4,089 emergency responses for anaphylaxis with a negligible difference in EMS call volume from 2019 to 2020. There was a significant increase in the frequency of calls requiring an EpiPen between 2019, 5.7%, and 2020, 7.5% ($p = 0.02$). Contrastingly, there was relatively little difference in frequency of calls not requiring an EpiPen during 2019, 94.6%, and 2020, 90.9%. Age was not found to be a significant variable within this analysis ($p=0.15$).

Conclusion:

This study shows that unlike many other medical emergencies where there was a decrease in EMS response during COVID-19, the number of calls for anaphylaxis stayed the same. However, there was a statistically significant increase in EMS responses requiring EpiPen use during the pandemic.

Figure 1: Anaphylaxis Calls per Year

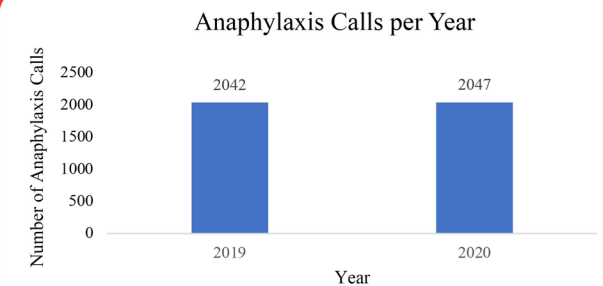
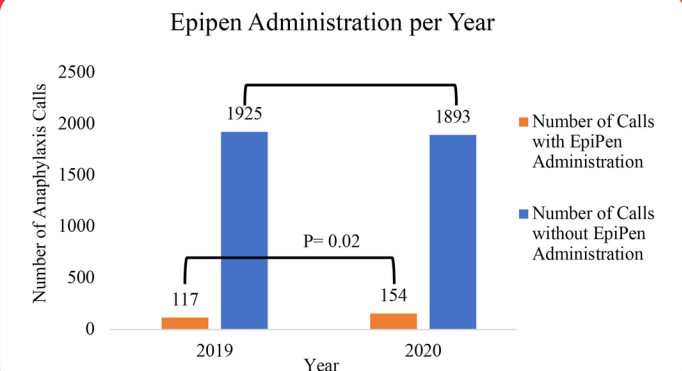


Figure 2: EpiPen Administration per Year



Response rate of motorcyclist on-call volunteer first responders during routine times versus a pandemic: a retrospective comparative study

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Introduction:

Magen David Adom's (MDA) motorcyclist on-call volunteer first responders (MOCVFR) play a vital role in pre-hospital response. These are trained volunteers, mostly emergency medical technicians with some paramedics, who respond by motorcycles mounted with lights and sirens and are equipped for all types of emergencies whether trauma or medical. Their response is critical for time-sensitive diagnoses such as cardiac arrest, respiratory arrest, and multi-trauma. The Covid-19 pandemic introduced a new kind of risk for all medical crews, including the MOCVFR.

Hypothesis:

The response rate of the MOCVFR will be affected by the pandemic resulting in a decreased rate of response, especially for calls that have a higher probability of being Covid-19 related (respiratory calls).

Methods:

This is a retrospective comparative study of data collected from the command-and-control database of the MDA National Call Center, comparing January 1, 2019 through December 31, 2019 (pre-COVID-19) to January 1, 2020 through December 31, 2020 (COVID-19). All data were entered automatically into an Excel spreadsheet and analyzed by SPSS.

A weighted analysis was performed to determine individual contributions.

Results:

The study included 1,328,553 overall calls- 655,127 in 2019 and 673,426 in 2020. There was a decrease of 6.44% ($P<0.001$) in the overall response rate, with a specific decrease of 22.16% ($P<0.01$) for respiratory related calls. The response rate for cardiac arrest calls also showed a decrease of 6.87% ($P<0.01$). However, other life-threatening emergencies that are less likely to be Covid-19 related showed an increase in response rate- severe trauma with an increase of 2.6% ($P<0.01$) and loss of consciousness with an increase of 2.62% ($P<0.01$).

Conclusion:

Covid-19 had a major impact on MOCVFR response rate during the first year of the pandemic. The significant drop in response to respiratory calls may point to a fear of the MOCVFR to exposure to the then unknown disease. When planning the response to future wide scale emergencies or pandemics, the impact on the pre-hospital volunteers needs to be considered and managed accordingly.

