

Public Interest in Cardiac Arrest in the United States following Damar Hamlin's injury on Monday Night Football



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INTRODUCTION

- Annually, 90% of ~356,000 out-of-hospital cardiac arrest reports in the United States result in death.¹
- High incidence reports of inadequate CPR performance corresponds to delayed identification of a cardiac arrest, lack of CPR exposure, and application of CPR protocols.² Greater CPR awareness and training increases survival by three fold.^{3,4}
- In a study, 19.7% stated that as a bystander they would perform CPR.⁵
- Athletic populations tend to have higher cardiac arrest identification, shorter delays in CPR, and increased survival rates.⁶ Furthermore, sports media has increased public interest in cardiac events.⁷
- On January 2nd, 2023, the cardiac arrest of Damar Hamlin, a 24-year-old NFL player, was reported on live television.⁸

OBJECTIVE

- To quantify the degree of which Damar Hamlin's televised incident triggered public interest in cardiac arrest, cardiopulmonary resuscitation, and commotio cordis, the suspected etiology of Hamlin's cardiac arrest.

METHODS

- Daily search interest data was obtained from Google Trends related to topics of 'cardiac arrest' and 'cardiopulmonary resuscitation' and injury of 'commotio cordis' within the United States from October 12, 2022 - January 8, 2023.
- Search interest from Google Trends is reported as relative search interest (RSI) on a 0-100 scale – where 100 is the peak interest within the searched timeframe.
- Auto-regressive integrated moving algorithm (ARIMA) was constructed for each of the topics as if the injury to Damar Hamlin had not occurred.
- Forecasted values and actual values were compared to determine the increase in RSI for each topic following the injury.

RESULTS

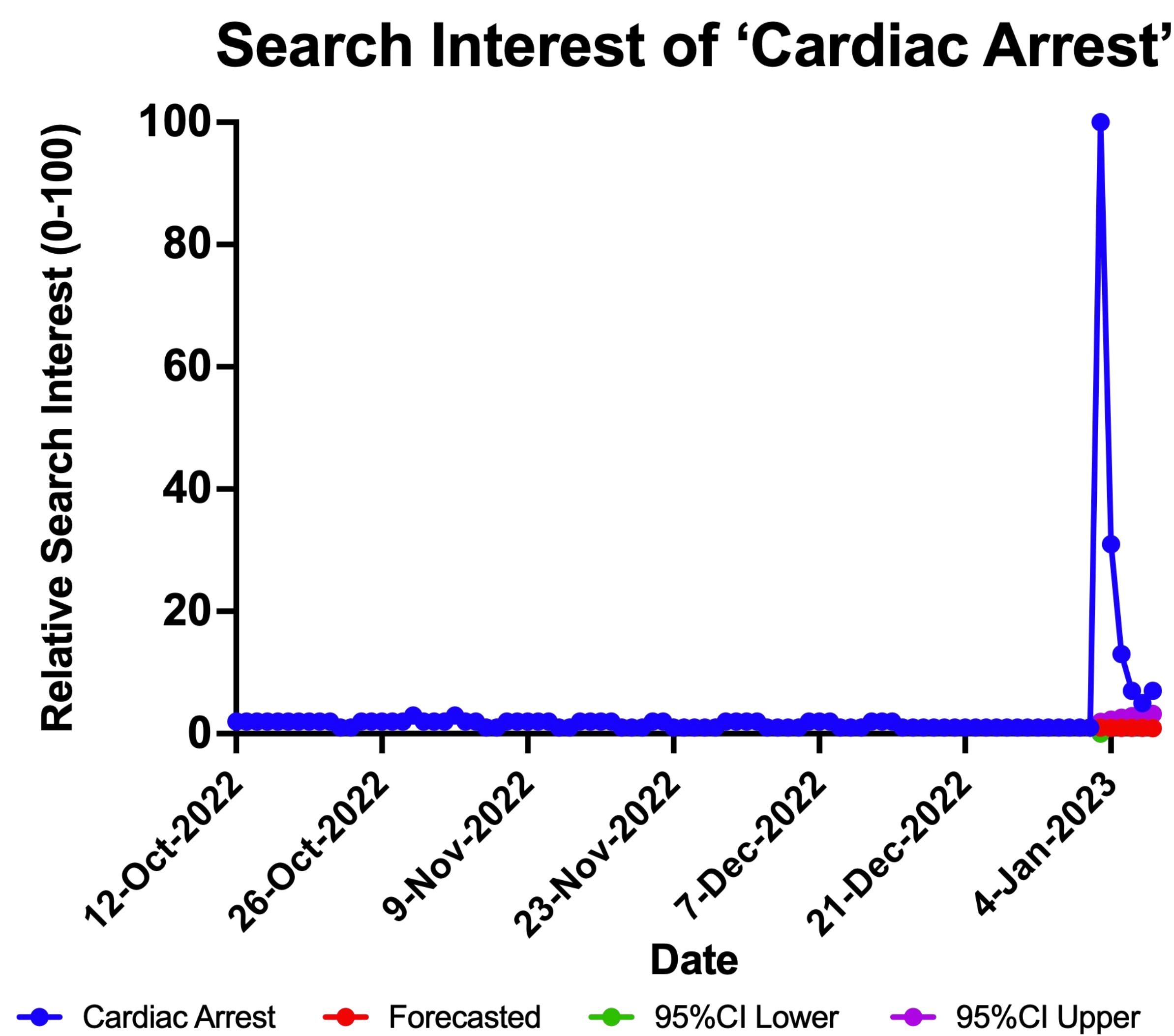


Figure 1. Search Interest of 'Cardiac Arrest' by Date

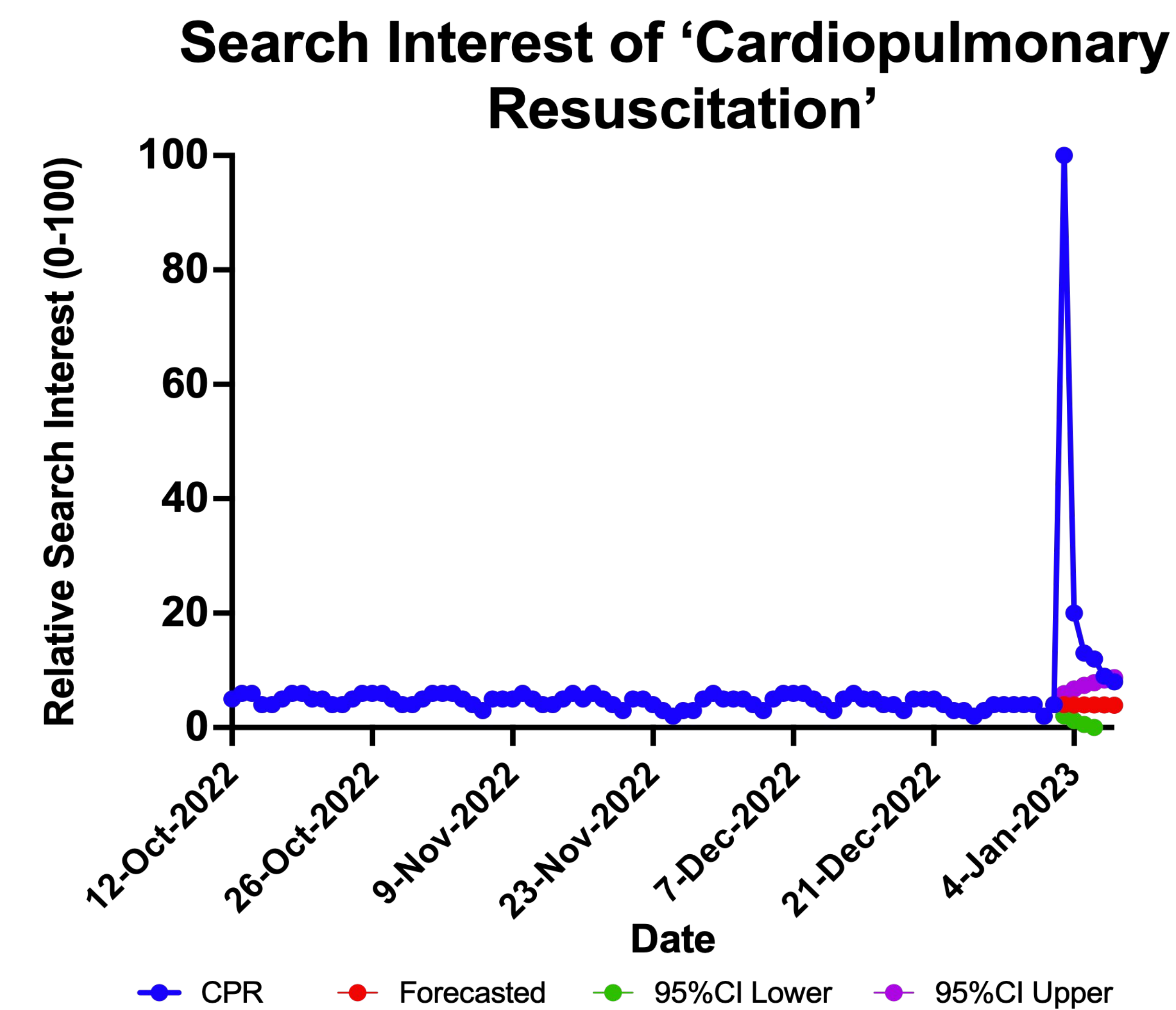


Figure 2. Search Interest of 'Cardiopulmonary Resuscitation' by Date

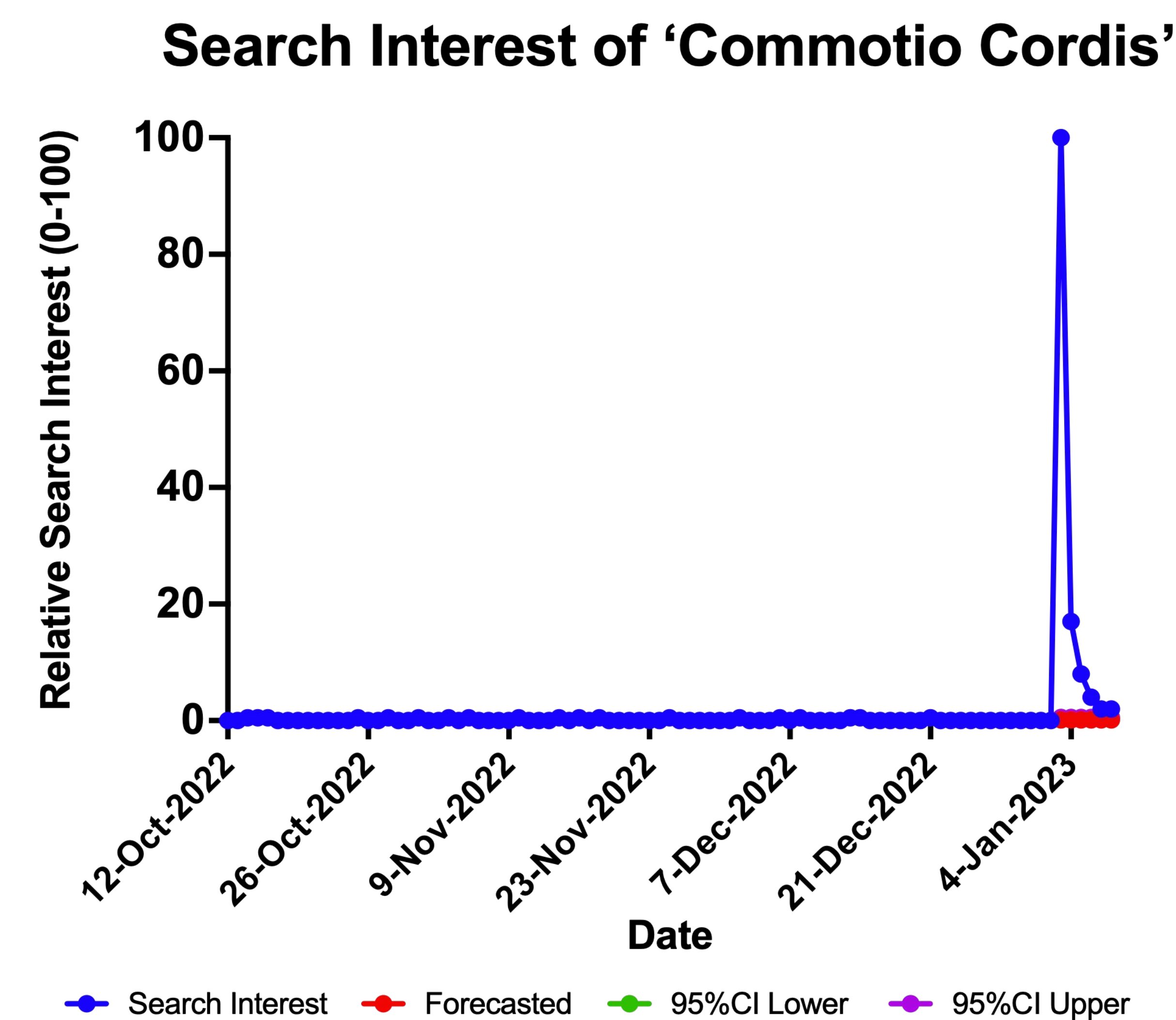


Figure 3. Search Interest of 'Commotio Cordis' by Date

- The largest peak in RSI observed occurred on January 3rd, 2023, the day following Damar Hamlin's televised cardiac arrest.
- The forecasted values compared to actual RSI values on January 3rd, 2023 represent significant increases in Google searches for 'cardiac arrest', 'cardiopulmonary resuscitation', and 'commotio cordis', as shown in Table 1.

	Forecasted RSI (95% CI)	Actual RSI	% Difference
'Cardiac Arrest'	0.99 (0.04-1.94)	100	10,023.46%
'Cardiopulmonary Resuscitation'	3.99 (2.03-5.95)	100	2,407.65%
'Commotio Cordis'	0.11 (-0.30 - 0.53)	100	87,268.42%

Table 1. RSI Percent Differences by Search Term

CONCLUSION

- Through Damar Hamlin's highly publicized cardiac arrest occurring during a televised NFL game, public interest in cardiac arrest, commotio cordis, and cardiopulmonary resuscitation increased as evidenced by our results.
- Increased interest in these topics could advance interest in cardiac arrest prevention and increase effectiveness of bystander interventions, such as cardiopulmonary resuscitation.

CLINICAL IMPLICATIONS

- The momentum of this increased public interest could be capitalized on by public health entities, as well as mass media outlets, to discuss the importance of recognizing symptoms of cardiac arrest and educate the public in performing effective bystander cardiopulmonary resuscitation attempts.

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