Aim Modern EMS provides a range of response options including management by:

1. telephone,
2. management and discharge or
3. referral at scene or transport to hospital.

We used linked data of ambulance records, hospital records and national mortality statistics for all calls to one ambulance service in England in a 6 month period to assess the costs associated with each response option.

Method We calculated costs for each type of EMS response using the linked data and NHS Reference Costs. We then used two risk adjusted indicators measuring:

1. rates of telephone or at scene management attending ED or admitted to hospital within 3 days
2. rates of patients taken to hospital and discharged from ED without treatment to identify matched cases of correct and incorrect response decisions to compare costs of each decision type.

Results 1 87 387 cases were available. One indicator (mean change in pain score) did not require risk adjustment. For all other indicators age, condition (or call reason) and deprivation were included in the final model. Gender was also included in indicators 2, 3 and 4 and hospital had an effect in indicators 4 and 5.

Conclusion We have created a set of indicators to reflect care for a broad range of EMS callers and care provided. Overall, a range of factors influence outcome and risk adjusted indicators are needed to provide fair and accurate assessments of performance.

Conflict of interest None

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