

Advanced Medical Priority Dispatch of Helicopter Emergency Medical Services (HEMS): a retrospective analysis of regional tasking accuracy in the East of England.



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Background

The Faculty of Pre-Hospital Care identified dispatch as a key research objective in 2011. There is considerable heterogeneity, and little consensus, of HEMS team dispatch best practice. In the East of England, five HEMS teams are tasked via a Critical Care Desk that screens 2,500 calls per day. The objective of this study was to identify patients most likely to benefit from HEMS team dispatch in the East of England by reporting Advanced Medical Priority Dispatch System (AMPDS) codes associated with the highest rates of patient contact and/or HEMS-level intervention.



Methods

This retrospective observational study used tasking data from the three regional HEMS Services (East Anglian Air Ambulance, Essex & Herts Air Ambulance Trust, Magpas), 2016-2019 inclusive. 23,030 (90.3%) taskings were linked to AMPDS codes.

Multiple data fields were captured, and analysis was undertaken in two stages using logistic regression models in R.

Stage one investigated which AMPDS codes had a significantly high rate of patient contact and/or HEMS-level intervention. Stage two explored which AMPDS categories had high rates of patient contact and/or HEMS-level intervention, and the association of other relevant variables with these outcomes.

Stage 1 Results

AMPDS codes that had significantly high contact or HEMS intervention rate.

Bold = >60% patient contact rate OR >60% HEMS intervention rate AND >10% of EEAST incidents as HEMS taskings.

Breathing Problems	06D02
Burns	07C03
Cardiac or Respiratory Arrest	09D01, 09E01, 09E02, 09E03
Chest Pain	10D01, 10D02, 10D04, 11E01F
Convulsions/Fitting	12D01, 12D02E
Falls	17A01G, 17A02G, 17B00G, 17B01G, 17D02, 17D02P , 17D03, 17D03, 17D04E, 17D04G, 17D04P, 17D06, 17D06P
RTC	29B01, 29D02l, 29D02m, 29D02n , 29D03V, 29D05, 29D05V, 29D06, 29D06V, 29D07, 29D07V, 29D08, 29D08V
Traumatic Injuries	30A01, 30B01, 30B02, 30D03
Unconscious/fainting	31D01
Other	35D03A

Stage 2 Results

HEMS at night and by RRV had a significantly lower rate of patient contact and HEMS intervention when compared with day and helicopter dispatch respectively. The presence of a clinician on the dispatch desk made no difference when compared to the times when only a dispatcher was present.

Age <16 years and the presence of multiple patients had a lower rate of HEMS intervention compared to the 16-55 year old reference group, whilst patients >55 years had higher rates of HEMS intervention. Males had a significantly higher rate of intervention than females.

Results Summary

Rates of patient contact ranged from 61.1% to 92.3%. The overall rate of HEMS intervention was 61.3%. 44 AMPDS codes had significantly high rates of patient contact and/or HEMS intervention. 16 codes had greater than 60% patient contact rate or greater than 60% intervention rate, and a greater than 10% HEMS tasking as a percentage of all taskings.

The odds of HEMS intervention were lower at night and on rapid response vehicle missions (compared to helicopter). The presence of a dispatch desk clinician made no significant difference to the outcomes.

Conclusion

This study has identified 16 high-yield AMPDS codes. We would recommend immediate HEMS dispatch to these codes to improve the utilization of this limited specialist prehospital resource.

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