

Assessment of the perceived benefit of Helicopter Emergency Medicine (HEMS) teams in the East of England: A multi-centre survey of crews

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Background

The potential benefits of critical care teams provided by Helicopter Emergency medical services (HEMS) are likely multifactorial yet have traditionally been described only in terms of clinical interventions undertaken.

There is a paucity of evidence about wider roles such as clinical experience, leadership and decision making. This project uses a novel survey to evaluate the wider role of HEMS in the East of England.

Methods

This multi-centre survey was carried out in the East of England where a population of 6.3 million is served by East of England Ambulance Service Trust (EEAST), supported by critical care teams from three HEMS charities: East Anglian Air Ambulance (EAAA), Magpas Air Ambulance and Essex & Herts Air Ambulance Trust (EHAAT).

All three HEMS charities implemented a mandatory survey over two periods (19th April 2021 to 20th June 2021; 1st December 2021 to 31st January 2022). The survey contained 10 drop-down response options describing potential benefits. During the second period, the same survey was additionally opened to EEAST crews.

The project was a service evaluation, as defined by the HRA, and approved by Anglia Ruskin University Research Ethics Committee (AH-SREP-21-032).

Analysis

HEMS Data manipulation was carried out in Excel and R. Results from the survey were reported as percentages, with Fisher's exact statistical tests used to compare proportions. Cohen's Kappa statistics were computed to measure agreement between HEMS and EEAST responses, reported as a Kappa value and p value. A significance level of $p < 0.05$ was used throughout.

Table 1 : HEMS crew survey responses for attended missions, N = 1403

Survey Response Option	Count	(%)
HEMS specific interventions (level 2 or 3 interventions)	993	70.8%
Provided advice/empowered ambulance crews	938	66.9%
Enhanced clinical decision making	754	53.7%
Scene management	718	51.2%
Triage decision making/destination planning	589	42.0%
Helped with family communication about the situation and outcome.	571	40.7%
Decision made to cease resuscitation/pronounced PLE	328	23.4%
Patient advocacy	165	11.8%
Facilitated hospital bypass	156	11.1%
No additional benefit beyond what the ambulance service provides	137	9.8%
Other (details in free text box)	97	6.9%
Reach patient in remote/inaccessible location*	16	1.1%

*option added in second period of study.

Results

During the 124 days of the survey there were 2287 HEMS taskings and 1303 patients treated. The most prevalent HEMS responses were that they provided a level 2 or 3 intervention (70.8%), provided advice and empowered crews (66.9%) and offered enhanced clinical decision making (53.7%). The 'no additional benefit' option was reported for 9.8% of missions. During the second phase of the survey, 51 responses from EEAST could be matched to HEMS responses.

The Kappa statistics showed fair agreement between HEMS and EEAST ($P < 0.05$) for HEMS providing a level 2 or 3 intervention, making triage decisions and patient advocacy. There was low to slight agreement between HEMS and EEAST responses on providing advice/empowering crews, clinical decision making, helping with the family and scene management.



Conclusion

HEMS crews self-reported an additional benefit in most patients they attend, indicating that some elements of tasking of critical care teams are working well. An attempt to validate the survey completed by HEMS with perspectives from ambulance crews was hampered by a low completion rate, highlighting the challenge of achieving these value-added projects at a time of significant pressure within the health service.

Overall, there was not a clear signal in the data that HEMS crews think they offer more benefit than ambulance service responders believe, but more that views are subjective and perspectives on individual jobs can differ significantly between individuals.



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