

## Accepted Manuscript

A simulation model to enable the optimization of ambulance fleet allocation and base station location for increased patient survival

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PII: S0377-2217(15)00430-0  
DOI: [10.1016/j.ejor.2015.05.040](https://doi.org/10.1016/j.ejor.2015.05.040)  
Reference: EOR 12964



To appear in: *European Journal of Operational Research*

Received date: 17 July 2014  
Revised date: 14 May 2015  
Accepted date: 17 May 2015

Please cite this article as: Richard McCormack, Graham Coates, A simulation model to enable the optimization of ambulance fleet allocation and base station location for increased patient survival, *European Journal of Operational Research* (2015), doi: [10.1016/j.ejor.2015.05.040](https://doi.org/10.1016/j.ejor.2015.05.040)

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**Highlights**

- We simulate and optimize within a multi-tiered Emergency Medical Service model.
- We apply the model using real call data from the London Ambulance Service.
- Increases in cardiac arrest patient survival are seen without additional resources.
- An optimized new base station location and resourcing improves patient survival.
- Optimizing the removal of a base station has low impact on survival probability.

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