**COST BENEFIT ANALYSIS**

**EMERGENCY MEDICAL RESPONSE BY FIRE AND RESCUE SERVICES**

**Summary**

This analysis was commissioned by the National Joint Council for Local Authority Fire and Rescue Services (NJC). It reports findings about the costs and benefits likely to be generated by the adoption of emergency medical response (EMR) as part of the standard role of firefighters across the UK.

In calculating costs, the model accounts for spending by Fire and Rescue Services (FRS) and the projected, indirect costs of social care for survivors of out-of-hospital cardiac arrests. Set against this expenditure, the analysis models the positive health and social care outcomes that are likely to accrue for beneficiaries of EMR, and expresses the value of these to the public purse.

The model estimates that, based on a ten-year projection of activity, FRS nationally would be likely to attend to approximately 750,000 emergency medical incidents, of which 150,000 would be out-of-hospital cardiac arrests. The model suggests in 61% of cases they play a crucial role in facilitating a timely response. The evidence suggests that, in 4.3% of attendances, FRS will support ambulance crews to make a life-altering impact on cardiac arrest sufferers, leading to new, good neurological outcomes. For each of these cases, they will create an average saving of £24,000 for clinical commissioners and a £19,500 net saving for social care commissioners.

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1 New Economy’s CBA model has been developed with national experts from HM Treasury, and its methodology has been adopted as supplementary guidance within HM Treasury Green Book recommendations on evaluation.

2 The model also includes an estimation of spending by ambulance services, where they have agreed a contractual arrangement to support EMR undertaken by partner FRS.
Approach to Analysis

This research has involved a synthesis of the best available data, insights from experts, and evidence from academia to develop a clear logic model, based on the ‘chain of survival’ of a patient following an out-of-hospital cardiac arrest episode. New Economy was given access to all relevant data from the NJC-sponsored EMR trials, drawing on the experience of 25 FRS to develop the foundation of this analysis. Researchers sought expert advice from recognised subject matter experts involved in Broadening Responsibilities (dedicated research on EMR previously commissioned by the NJC, published in early 2016), and representatives of the Personal Social Services Research Unit (PSSRU).

New Economy’s research is the most detailed examination yet of the costs and benefits of UK firefighters co-responding to out-of-hospital cardiac arrests. Nonetheless, it is important that the findings are seen and understood as necessarily indicative, given the nature of cost benefit analysis (CBA) as a discipline, and the limitations of the available evidence base. Considerations include:

- Record-level health and social care data was not available.
- Data from the NJC trial demonstrated variation among services across the UK.
- Research does not reference the degree to which costs and benefits have already been borne.

All evidence used in the course of analysis has been graded to reflect the degree of confidence/certainty with which it has been handled. A degree of proportional up- or down-grading has been applied to both costs and benefits, to reflect what is known in CBA terms as “optimism bias”. This is in-keeping with HM Treasury’s approved methodology for business case development.

**EMR Cohort**

*Cohort calculated using average monthly attendances of trial services, projected over the resident population of all FRS who co-respond, and adjusted to account for the nature of attendance. This established that the volume of attendances likely to be made is 75,000 p.a, of which the volume for OHCA is likely to be 15,000 p.a.*

**Response Times**

*Calculations based on a comparison between trial data from 25 services and the Category A response times of co-terminous ambulance services. This established the rate at which FRS were likely to facilitate a timely response (61%), and the speed of response where they were likely to be first on scene (01m 47s on average).*

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<th>Clinical Commissioners</th>
<th>£12.6 million p.a.</th>
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<tr>
<td>Social Care Commissioners</td>
<td>£6.7 million p.a.</td>
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**ROSC**

*15% rate increase in survival/proxy return of spontaneous circulation (ROSC) for 1m 47s response improvement.*

**Neurological Deficits**

*57% of those who would have experienced CPC3-4 would then have been discharged into rehabilitative care. Mean length of stay in care is 832 days.*

**Cerebral Performance**

*48% who achieve pre-hospital ROSC will have good cerebral performance (i.e. CPC1-2).*

**Domiciliary Care Savings**

*Cost per hour of support is £30.75 per hour. Average contact time is 12.2 hour per week.*

**Working Age Population**

*33% of OHCA sufferers with new CPC 1-2 are of working age.*

**Residential Care Savings**

*4% would have been discharged into residential care. Cost per admission is £389 per week.*

**Employment Rate**

*65% of general population are both economically active and employed.*

**Fiscal Benefit of Work**

*£10,835 saved by DWP each year per individual who does not need to claim Employment Support Allowance (ESA)/universal credit.*