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Conference Abstract

Cost-effectiveness modelling of telemonitoring after discharge from hospital with heart failure

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Abstract

OBJECTIVES: To estimate the cost-effectiveness of home telemonitoring (TM) or structured telephone support (STS) strategies versus usual care for adults recently discharged (within 28 days) after a heart failure (HF) exacerbation in England and Wales.

METHODS: A Markov model was used to evaluate three interventions: 1) STS via human to machine (HM) interface; 2) STS via human to human (HH) contact; and 3) TM, against 4) usual care. Given heterogeneity in the interventions, cost-effectiveness analysis was performed using bottom up costing scenarios. Costs and quality adjusted life years (QALYs) over a 30-year horizon were estimated based on monthly probabilities of death and monthly risks of hospitalisations (HF-related complications or other causes) estimated from clinical effectiveness parameters computed using a network meta-analysis of randomised controlled trials.

RESULTS: Base case monthly costs per patient were: £27 for usual care, £119 for STS HM, £179 for STS HH and £175 for TM. TM was the most cost-effective strategy in the scenario using these base case costs. Compared with usual care, TM had an estimated incremental cost effectiveness ratio (ICER) of £9,552/QALY, whereas STS HH had an ICER of £63,240/QALY against TM. STS HM was dominated by usual care. Probabilistic sensitivity analysis (PSA) showed 44% chance of TM being cost-effective with STS HH 36%, STS HM 18% and usual care 2%, respectively. Threshold analysis suggested that the monthly cost of TM has to be higher than £390 to have an ICER greater than £20,000/QALY against STS HH. Scenario analyses performed using higher costs of usual care, higher costs of STS HH and lower costs of TM do not substantially change the conclusions.

CONCLUSIONS: Cost-effectiveness analyses suggest TM was an optimal strategy in most scenarios, but there is considerable uncertainty in relation to clear descriptions of the interventions and robust estimation of costs.

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Keywords:

cost-utility analysis, heart failure, telemonitoring

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