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The Estimated Cost-Effectiveness Of Physician Staffed HEMS In Finland

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INTRODUCTION

- HEMS play an important role in prehospital care for critically ill patients, offering access to remote areas, faster transport, and advanced interventions.
- Despite the high costs associated with HEMS, potential benefits include reduced mortality and improved patient outcomes compared to ground based EMS.
- Comparing and applying HEMS research to other health care systems remains challenging due to system differences.

OBJECTIVE

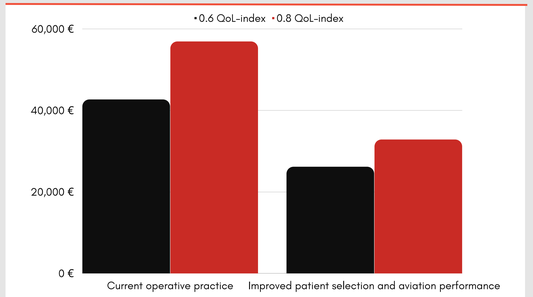
- Evaluate the estimated cost-effectiveness of physician staffed HEMS in Finland compared to Advanced Life Support (ALS) ambulance-based EMS
- Assess conditions for optimization of HEMS
- Explore improvements in patient selection and aviation performance

METHODOLOGY

- Incremental cost-effectiveness ratio (ICER) evaluation
- Comparing outcomes and costs between HEMS and ambulance-based EMS under current practices and in developed scenarios involving improvements in patient selection and aviation performance
- Measuring health benefits through 30-day mortality and quality-of-life
- EuroQoL scale estimation for HRQoL
- Sensitivity analysis conducted for QALY-indexes
- Survival rates calculated using national HEMS quality registry (FHDB) which is one of the worlds most extensive databases describing emergency medical practise
- Cost-structure analysis of national HEMS operator in Finland (FinnHEMS)

RESULTS/FINDINGS

- Current HEMS practices prevent 30-day mortality for 68.1 patients, with an ICER of 43,688-56,918€/QALY.
- Including stroke patients in dispatch criteria improves cost-effectiveness significantly.
- This improvement results in approximately 665 additional QALYs per year.
- The ICER for the improved scenario ranges from 25,000-33,000€/QALY.



Sensitivity analysis on the comparison of Incremental Cost-Effectiveness Ratios (ICER) for HEMS under current practices (43,688-56,918€/QALY) and with optimized patient selection and aviation performance (25,000-33,000€/QALY), highlighting the potential for significant improvements in cost-effectiveness.

CONCLUSION

- The study provides comprehensive review of the cost-effectiveness of Finnish HEMS, focusing on 30-day mortality prevention
- The ICER of HEMS intervention compared to ground-based EMS is 42,688€-56,918€
- Finnish HEMS operations are acceptable from a societal willingness-to-pay perspective, with costs per QALY aligning with commonly used healthcare willingness-to-pay values.
- The cost-effectiveness of Finnish HEMS is best improved by including new patient groups as the overall costs are fixed (94%) and determined by capacity utilization
- The cost of QALY is high in HEMS operations, necessitating the systematic tracking of treatment results and costs in the future