



Title	Systematic Review of the Effectiveness and Cost-effectiveness, and Economic Evaluation, of Home versus Hospital or Satellite Unit Haemodialysis for People with End-stage Renal Failure
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Aim

To assess the effectiveness and cost effectiveness of home hemodialysis, compared with hemodialysis in a hospital or satellite unit, for people with end-stage renal failure.

Conclusions and results

Twenty-seven studies met the inclusion criteria for effectiveness. Generally, the evidence from the studies suggests that home hemodialysis (HD) is more effective than hospital HD, and modestly more effective than satellite HD. People dialyzed at home generally experienced a better quality of life. However, their partners tended to be less satisfied. Compared with hospital HD, patients on home HD were hospitalized less, tended to live longer, were more likely to be employed full-time, and experienced fewer adverse events during hemodialysis. People on home HD are a highly select group (younger and fewer comorbidities). The evidence indicates lower total costs for home HD compared with hospital HD (payback period about 14 months). Satellite units may vary in cost, depending on staffing intensity and use of the HD machines. In low-risk adults, home HD is less costly than satellite HD, which is less costly than hospital HD. The results of the economic model generally reflected those from the literature for younger, fitter patients without serious comorbidities who received HD for 4–5 hours 3 times per week. The main difference was that, over a 5-year period, the model indicated that home HD was more effective but more costly than satellite HD. Sensitivity analysis was conducted on the cost of home HD, the staffing requirements for satellite HD, the level of benefits each modality of hemodialysis might provide, travel costs, and cost of allowances. The two costs that most influenced the estimates of cost per quality-adjusted life-year (QALY) were travel and allowances for carers of patients on home HD. Generally, the data in the model were limited and came from nonrandomized studies. A new generation of home HD machines is under development, but could not be analyzed in this review.

Recommendations

Home HD has tended to be used on a highly select group of relatively young patients with low comorbidity. This review shows that it is generally more effective than hospital HD on a range of outcomes, and modestly more effective than satellite HD. It is unclear to what extent these findings are influenced by selection bias.

Methods

Electronic searches were used to identify published and unpublished studies. Two reviewers independently extracted data and assessed study quality. A Markov model comparing home with hospital and satellite HD was constructed and used to estimate costs and QALYs for patients starting renal replacement therapy (RRT) on home, satellite, or hospital HD.

Further research/reviews required

Further prospective comparative studies are needed on the effectiveness and cost effectiveness of home versus satellite HD. Further qualitative research is also needed on the acceptability to patients and their carers/families of home HD as a form of treatment.