

## Cost-Effectiveness of a Certified Service or Hearing Dog Compared to a Regular Companion Dog

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**Abstract :** Background: Assistance dogs are dogs trained to assist persons with functional impairment or chronic diseases. The assistance dog concept includes different types: guide dogs, hearing dogs, and service dogs. The service dog can further be divided into subgroups of physical services dogs, diabetes alert dogs, and seizure alert dogs. To examine the long-term effects of health care interventions, both in terms of resource use and health outcomes, cost-effectiveness analyses can be conducted. This analysis can provide important input to decision-makers when setting priorities. Little is known when it comes to the cost-effectiveness of assistance dogs. The study aimed to assess the cost-effectiveness of certified service or hearing dogs in comparison to regular companion dogs. Methods: The main data source for the analysis was the "service and hearing dog project". It was a longitudinal interventional study with a pre-post design that incorporated fifty-five owners and their dogs. Data on all relevant costs affected by the use of a service dog such as; municipal services, health care costs, costs of sick leave, and costs of informal care were collected. Health-related quality of life was measured with the standardized instrument EQ-5D-3L. A decision-analytic Markov model was constructed to conduct the cost-effectiveness analysis. Outcomes were estimated over a 10-year time horizon. The incremental cost-effectiveness ratio expressed as cost per gained quality-adjusted life year was the primary outcome. The analysis employed a societal perspective. Results: The result of the cost-effectiveness analysis showed that compared to a regular companion dog, a certified dog is cost-effective with both lower total costs [-32,000 USD] and more quality-adjusted life-years [0.17]. Also, we will present subgroup results analyzing the cost-effectiveness of physical service dogs and diabetes alert dogs. Conclusions: The study shows that a certified dog is cost-effective in comparison with a regular companion dog for individuals with functional impairments or chronic diseases. Analyses of uncertainty imply that further studies are needed.

**Keywords :** service dogs, hearing dogs, health economics, Markov model, quality-adjusted, life years

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