Author's response to reviews

Title: The cost-effectiveness of early noninvasive ventilation for ALS patients.

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Author's response to reviews: see over
August 16, 2005

The BioMed Central Editorial Team

Re: MS: 3647826176695936- The cost-effectiveness of early noninvasive ventilation for ALS patients.

Dear Editorial Team:

We are grateful to the reviewers for their helpful comments and thoughtful suggestions. We have responded to the each specific comment below. We believe that incorporating the reviewers’ suggestions have resulted in an improved manuscript and are hopeful that BMC Health Services Research will find the revised version acceptable for publication.

Reviewer Edward Kasarskis, M.D., Ph.D.

1. “It would have been more complete if the authors performed their analysis at different FVC strata (e.g., the benefit realized starting at FVC of 100%, 90%,...60%)...Since this is a theoretical paper, they could have produced a “grid” showing the cost-effectiveness when initiating therapy at different levels”

We agree that entering patients into the Markov model by FVC strata as outlined above would be informative. Unfortunately, the health state utilities corresponding to FVC strata are not known. We assume that because patients in the model have an FVC greater than 50%, all patients are either mild or moderate ALS disease severity. We would also assume that more severe disease state is a proxy for lower FVC. Therefore, in attempt to account for differing FVCs at model entry, we performed a sensitivity analysis on the probability of starting in the mild rather than moderate severity state. This analysis did not alter the results as NIPPV remained cost-effective.

To explain this, we added the following to page 6 of the methods: “As variations in FVC at entry may also relate to ALS disease stage at entry, we also conducted a one-way sensitivity analysis on the probability of entering the model in the mild stage, as opposed to the moderate stage. Given that all patients are assumed to have recently been diagnosed with ALS and have an FVC > 50%, it was assumed that no one would enter the model in a severe or terminal state.”

The result of this additional sensitivity analysis was added to page 7 and 8 as follows: “No alteration of the probability of entering the model in the mild disease stage caused the incremental cost-effectiveness of NIPPV to exceed the $50,000 per QALY threshold.”
2. “A second issue is their choice of performing the analysis with a 1 year time horizon until 50% FVC…The conclusions may be different in a patient with intrinsically rapid progression vs one with intrinsically slow progression”

To address this comment, the following was added to page 6 of the methods section: “To account for patients entering the model at varying rates of disease progression, the time horizon was adjusted. The time horizon was varied between 6 months and 2 years, in a one-way sensitivity analysis.”

This did not change the overall conclusion, as altering the time horizon maintained the incremental cost-effectiveness below the willingness-to-pay threshold of $100,000 per QALY. These results were summarized on page 8 as follows: “Shorter time horizons were associated with a lower cost-effectiveness ratio. A time horizon of 6 months was associated with an incremental cost-effectiveness of $76,909, while an 8 month time horizon was associated with incremental cost-effectiveness of $53,001. Time horizons of 10 months or above were associated with an incremental cost-effectiveness less than $50,000.”

Reviewer Noah Lechtzin, M.D., M.H.S.

No changes or revisions were requested by this author. We appreciate his favorable comments.

Sincerely,

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