# The economic consequences of treating OSA in the UK

Rejon-Parrilla, J.C.[1], Garau, M.[1], Sussex, J.[1] and Smith, J.[2]
([1]Office of Health Economics; [2]British Lung Foundation)

Email: jcrejon@ohe.org, jsussex@ohe.org

## 1. Background

Currently, an estimated 1.5 million adults in the UK are living with obstructive sleep apnoea (OSA).

Treatment for OSA varies with disease severity. In 2008, the National Institute for Health and Care Excellence (NICE) assessed three interventions and recommended the use of continuous positive airway pressure (CPAP) machines for adults with moderate or severe OSA. NICE estimated the cost effectiveness of treating adults with OSA with CPAP at £5,000 per QALY*, well below its cost-effectiveness threshold-range of £20,000-£30,000.

Despite the clear evidence of benefit and value for money, there is evidence from recent research estimating that about 85% of OSA cases currently are undiagnosed and untreated in the UK.

*QALY = quality adjusted life year

## 2. Aims

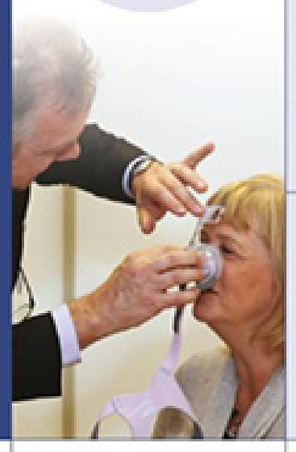
- Analyse and present the economic implications of treating OSA to NICE recommended levels.
- Estimate the incremental costs/savings and health benefits of treating moderate to severe OSA with CPAP vs not treating
it and vs current levels of treatment.

## 3. Methods

- We reviewed literature published in peer reviewed journals and in the grey literature about the economics of OSA in the UK and internationally.
- We developed a framework capturing key impacts of treating and not treating OSA.
- The findings were reviewed by the BLF's OSA working group of OSA experts who validated all the assumptions presented.

## 4. Results

**Incremental cost savings and health benefits:** untreated vs current vs all treated

| OSA prevalence in the UK | Treatment | Estimated current saving to NHS | Estimated potential saving to NHS | Consequences of treatment |
|---|---|---|---|---|
| 1.5 million adults | CPAP | Treating 337,000 who have MODERATE to SEVERE OSA | TREATING ALL 667,000 who have MODERATE to SEVERE OSA | INCREASED<br>• Survival rates<br>• Quality of life (partner)<br>• Productivity |
| 45% have MODERATE and SEVERE OSA i.e. 667,000 people |  | £27 million saved | £55 million SAVED | REDUCED<br>• Strokes<br>• Cardiovascular events<br>• Road collisions<br>• Clinic visits<br>• Work related injuries |
| | | 20,000 QALYs*gained | 40,000 QALYs* GAINED | |
| 55% have mild OSA | • lifestyle advice<br>• oral device<br>• CPAP only if appropriate | | | |

*QALY = quality adjusted life year

## 5. Discussion

Considering only direct benefits, we estimate the NHS in the UK would be saving a total of £55 million and producing 40,000 QALYs annually if all people with moderate to severe OSA (45% of the total OSA patient population) were diagnosed and treated with CPAP, relative to none being diagnosed and treated.

If everyone estimated to have moderate to severe OSA in the UK were treated, compared with the estimated current treatment level, the NHS would be saving £28 million pounds and producing 20,000 QALYs annually. Approximately 40,000 road accidents could be prevented.

In addition to direct health benefits to patients and costs/savings to the NHS, treating OSA produces wider economic benefits, including increased productivity due to reduced sleepiness at work, and also quality of life improvements for people close to OSA patients (their bed partners).

## 6. Conclusion

The evidence found in the literature demonstrates that OSA patients, the NHS and the wider society in the UK have not yet obtained all of the economic and health benefits that could be achieved. An increase in the rate of uptake of CPAP could double the savings to the NHS and the health benefits to patients compared to the current situation.

Key references

- NICE. 2008. Continuous positive airway pressure for the treatment of obstructive sleep apnoea/hypopnoea syndrome. NICE Technology Appraisal guidance 139. London.
- Guest, J. F., Helter, M. T., Morga, A. and Stradling, J. R., 2008. Cost-effectiveness of using continuous positive airway pressure in the treatment of severe obstructive sleep apnoea/hypopnoea syndrome in the UK. Thorax, 63(10), pp.860-865.

Acknowledgements

BLF OSA working group members, especially John Stradling, Martin Allen, John O'Reilly, Eric Livingston, Brendan Cooper, Amit Benjamin and Majella Tuohy.

Resmed, who provided funding for the British Lung Foundation OSA project.

Note: the full report can be found and is freely available to download at both the BLF the OHE website: www.ohe.org/publications/obstructive-sleep-apnoea-health-economics-report