# ROLE OF PRIMARY CARE IN THE FOLLOW-UP OF PATIENTS WITH OBSTRUCTIVE SLEEP APNOEA UNDERGOING CPAP TREATMENT: A RANDOMISED CONTROLLED TRIAL.

The authors have provided this supplementary material to give readers additional information concerning this work.

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**COST-EFFECTIVENESS ANALYSIS:**

**eMETHODS**

**Within-trial cost calculation**

We analysed the following cost groups (Table 2, in the main document):

1. **Training course** included the cost of the 6-hour informational course for the PC physicians and nurses regarding the management of OSA patients. One sleep physician and 1 nurse attended for each PC participant centre.

2. **Follow-up visits** included personnel salaries (for physicians and nurses) and the proportional burden on the general budget of the SU or PC centres (elements of fixed costs).

3. **Telephone consultations** included the cost of phone calls between patients who were followed at the PC or SU, with the physician or nurse who conducted the follow-up visits assuming a mean of time of 15 minutes per call.

4. **CPAP treatment** included the public health system's payments to private CPAP providers per patient. This burden included personnel salaries (technicians, physicians, and nurses) for home care, potential troubleshooting, a linear five-year equipment depreciation, consumables and company benefits.

5. **Patient trips** included estimates of the cost per kilometre resulting from patients traveling from home to hospitals or primary care centres for personal visits. The cost per kilometre was calculated from the official reimbursement in the public health system.

**Cost-effectiveness analysis**

The cost-effectiveness of using a new PC setting to follow OSA patients undergoing CPAP treatment has been evaluated using the incremental cost-effectiveness ratio (ICER),[2] which consisted of calculating the ratio between the differences in the cost and effectiveness of the two study arms (PC and SU).

**eRESULTS and comments**

The effectiveness (by QUALY analysis) was similar between the PC and SU protocols ($0.009 \pm 0.033$ for PC and $0.017 \pm 0.042$ for SU; p=0.13). Therefore, the resulting ICER represents a slight but not significant decrease in the effectiveness and an estimated saving of €26,852 per QUALY in the PC setting compared with the SU setting.

eTable 1 shows the ICERs, and eFigure 1 shows the cost-effectiveness relationship according to the simulated variations in cost groups (sensitivity analysis). eFigure 2 represents the cost-effectiveness relationship by patient according to Bayesian analysis.

The principal finding was that PC provides a realistic follow-up alternative for OSA patients undergoing CPAP treatment. This alternative has an effectiveness that is similar that obtained with the usual SU follow-ups, and it provides a 60% savings in the cost of CPAP treatment monitoring.

**eTable 1:** Total cost/patient for PC and SU settings, differences and ICERs, according to the sensitivity analysis

| | Primary care (Total cost) | Hospital (Total cost) | Total cost difference | ICER (QUALYS) |
|---|---|---|---|---|
| Training cost | | | | |
| >20% | 146.90 | 356.5 | -209.6 | 26531.65 |
| <20% | 141.84 | 356.5 | -214.66 | 27172.15 |
| Visits* | | | | |
| >20% | 159.13 | 412.46 | -253.33 | 32067.09 |
| <20% | 129.61 | 300.54 | -170.93 | 21636.71 |
| CPAP | | | | |
| >15% | 152.61 | 409.98 | -257.37 | 32578.48 |
| <15% | 136.13 | 303.03 | -166.9 | 21126.58 |
| Patient travel costs | | | | |
| >30% | 144.89 | 360.69 | -215.8 | 27316.46 |
| <30% | 143.85 | 352.31 | -208.46 | 26387.34 |

*=General practitioner or nurse visits

**eFigure 1:** The cost-effectiveness relationship for the true and simulated (sensitivity) analyses assessing the effectiveness, according to QUALYS. The sensitivity analysis of the true ICER appears in the non-dominant quadrant, representing significant cost savings with slightly but not statistically significant worse effectiveness for the PC protocol.
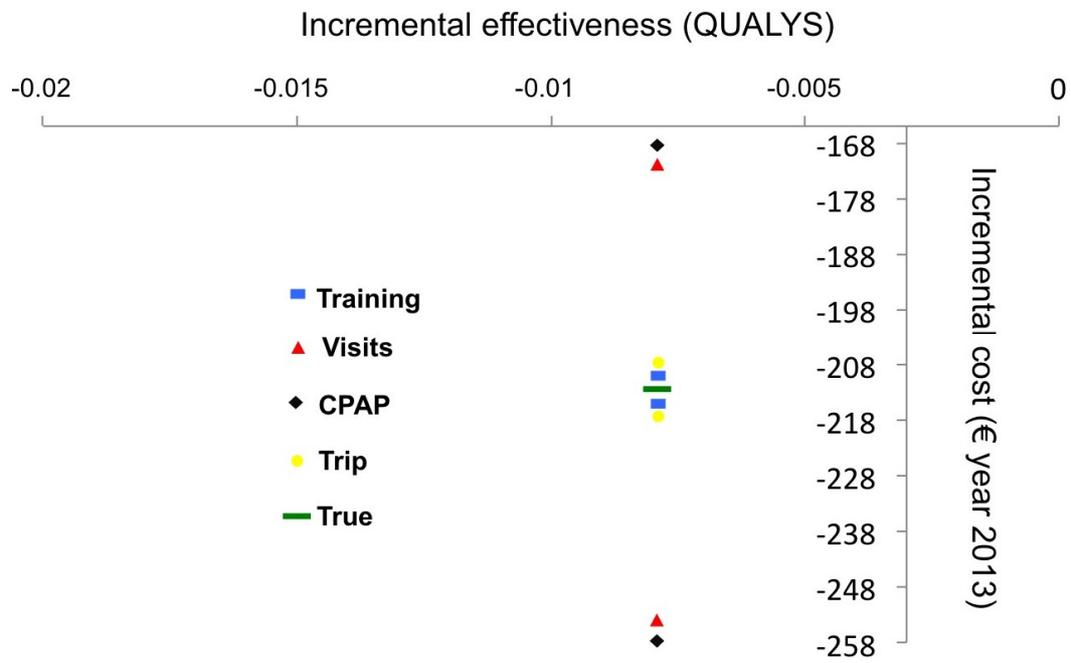
**eFigure 2:** Cost effectiveness relationship per patient. Thirty per cent of the patients are in the dominant quadrant, indicating slightly better effectiveness and significantly lower costs for the primary care protocol. The remaining patients are in the interpretative quadrant with slightly worse effectiveness but significant cost savings for PC protocol.
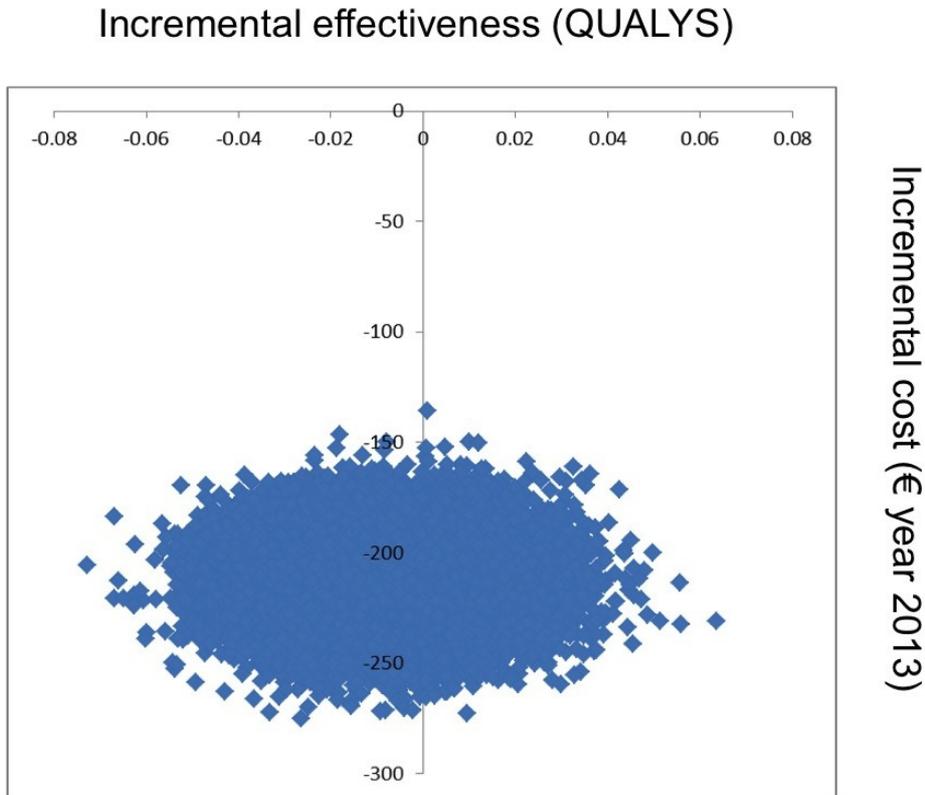
**eReferences:**

1      Official Journal of the Government of Catalonia   (Document number: CVE-DOGC-A-13051031-2013) http://www20.gencat.cat/portal/site/portaldogc

2      Weinstein MC, Stason WB. Foundations of cost-effectiveness analysis for health and    medical    practices.    *N    Engl    J    Med*    1977;**296**:716–21. doi:10.1056/NEJM197703312961304