

Appendix 2 (as supplied by the authors): Cost-effectiveness analysis

Methods

The cost-effectiveness analysis was based on the imputed dataset. The costs were calculated from a societal perspective during the 1-year follow-up. Costs were converted to 2010 price levels using the standard Dutch consumer price index.¹ The intervention costs consisted of costs of development of the training materials, costs of the training (trainer, location, travel costs, GPs' investment of time), and the implementation costs (inviting the patients, etc). The cost of GP consultations and prescriptions were calculated based on standard cost prices², and cost of medication was based on information from the Dutch Health Care Insurance Board (www.medicijnkosten.nl). Medication costs based on the prescription data from the EPR were comparable to the medication costs based on self-reported medication use in the headache diaries. The medication costs presented here are based on the prescription data from the EPR.

Cost of absence from work was calculated with the value per hour based on age and gender-specific national averages.² Unpaid labour was compared with the unpaid labour at baseline; any difference in hours of unpaid labour was valued at the costs of informal care (€9.22 per hour).²

Group differences in quality-adjusted life years (QALYs) were analyzed using the independent-samples t test, and group differences in costs were analyzed using the bootstrap method. The cost utility analysis compared societal costs to QALYs based on the Dutch EQ-5D tariffs.³

Table 5. Mean cost per patient in the intervention and control group in the first year after randomisation.

Results

The average costs per patient in the intervention group were €504 (95% confidence interval €379 to €629) higher than the average costs in the control group. This was mainly due to the costs of the GP training and the intervention consultations (Table 1). The non-healthcare costs per patient in the intervention group (€767) were comparable to those in the control group (€703). The societal costs per patient (i.e. the sum of healthcare and non-healthcare costs) are higher for the intervention group than for the control group. However, due to the large standard deviations this difference is not significant (difference €568; 95% confidence interval €-1126 to €2261).

The QALYs estimates over one year showed no difference between the intervention and the control group.

Combination of higher societal costs and less favourable QALY outcomes in the intervention group result in a low probability (between 0.2 and 0.3) that the intervention is cost effective compared to the control group for acceptable values of the willingness to pay.

Table 1. Mean cost per patient in the intervention and control group in the first year after randomisation.

| Cost item | Intervention group n=233 | Control group n=257 | Difference | |
|---------------------------------------|-----------------------------|------------------------|------------|-------------|
| | Costs (€) | Costs (€) | Costs (€) | p-value* |
| Intervention | 410 | 0 | 410 | - |
| - development | 54 | 0 | 54 | |
| - training GP | 299 | 0 | 299 | |
| - implementation GP | 57 | 0 | 57 | |
| GP consult – total (SD) | 222 (207) | 149 (149) | 73 | 0.00 |
| – headache (SD) | 44 ³¹ | 17 ¹³ | 28 | 0.00 |
| Triptan (SD) | 357 (728) | 345 (412) | 12 | 0.88 |
| Prophylaxis (SD) | 61 (128) | 43 (97) | 18 | 0.10 |
| Analgesic (SD) | 47 (72) | 56 (87) | -9 | 0.21 |
| <i>Total healthcare cost (SD)</i> | <i>1098 (833)</i> | <i>594 (525)</i> | <i>504</i> | <i>0.00</i> |
| Productivity costs (SD) | 719 (1441) | 646 (1386) | 73 | 0.61 |
| Unpaid labour (SD) | 48 (8761) | 57 (7574) | -9 | 0.99 |
| <i>Total non-healthcare cost (SD)</i> | <i>767 (8761)</i> | <i>703 (7484)</i> | <i>64</i> | <i>0.95</i> |
| Total societal cost (SD) | 1865 (8786) | 1297 (7545) | -568 | 0.63 |

*bootstrap method, correcting for non-response using multiple imputation

References

1. CBS Statline. 2011. Den Haag/Heerlen, Centraal bureau voor de Statistiek. 18-2-2010. Ref Type: Online Source
2. Oostenbrink JB, Boumans CAM, Koopmanschap MA, Rutten FFH. Manual for cost analyses, methods and standard prices for economic evaluations in health care [In Dutch]. Amstelveen: Dutch Health Insurance Executive Board; 2004.
3. Lamers LM, Stalmeir PFM, McDonnell J, Krabbe PFM, Busschbach JJ. Kwaliteit van leven meten in economische evaluaties: het Nederlands EQ-5D-tarief. *Ned Tijdschr Geneeskd* 2005; 149:1574-1578.