

## **1 High intensity psychological interventions for generalised anxiety disorder**

### Reference to included study

Heuzenroeder L, Donnelly M, Haby MM, Mihalopoulos C, Rossell R, Carter R, Andrews G, Vos T (2004) Cost-effectiveness of psychological and pharmacological interventions for generalized anxiety disorder and panic disorder. *Australian and New Zealand Journal of Psychiatry*, 38, 602-612.

Anxiety (update): Evidence tables for economic studies

Study Country Study type	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: Cost-effectiveness	Comments
Heuzenroeder et al, 2004  Australia  Cost-utility analysis	<p><u>Interventions:</u> CBT provided by:</p> <ul style="list-style-type: none"> <li>• Private psychologist</li> <li>• Public psychologist</li> <li>• Private psychiatrist</li> <li>• Public psychiatrist</li> </ul> <p>Standard care, defined as 27% evidence-based medicine (EBM), 28% non-EBM, and 45% no care</p>	<p>People with generalised anxiety disorder</p> <p>Decision analytic modelling</p> <p>Source of clinical effectiveness data: systematic review and meta-analysis</p> <p>Source of resource use: estimates and assumptions</p> <p>Source of unit costs: national sources</p>	<p><u>Costs:</u> Consultations with psychologists, psychiatrists, GPs</p> <p>Incremental cost for all adults with GAD in Australia:</p> <ul style="list-style-type: none"> <li>• Private psychologist: Aus\$140 million</li> <li>• Public psychologist: Aus\$50 million</li> <li>• Private psychiatrist: Aus\$170 million</li> <li>• Public psychiatrist: Aus\$160 million</li> </ul> <p><u>Primary outcome:</u> number of Disability Adjusted Life Years (DALYs) averted</p> <p>Incremental DALYs averted for all adults with GAD in Australia: 7200</p>	<p>ICER of CBT versus standard care:</p> <ul style="list-style-type: none"> <li>• Private psychologist: \$28,000/DALY averted</li> <li>• Public psychologist: \$12,000/DALY averted</li> <li>• Private psychiatrist: 32,000/DALY averted</li> <li>• Public psychiatrist: \$31,000/DALY averted</li> </ul> <p>Sensitivity analysis - range of ICERs (\$/DALY averted):</p> <ul style="list-style-type: none"> <li>• Private psychologist: 17,000-56,000</li> <li>• Public psychologist: 7,000-25,000</li> <li>• Private psychiatrist: 20,000-63,000</li> <li>• Public psychiatrist: 19,000-63,000</li> </ul>	<p>Perspective: healthcare sector (including patient expenses) Currency: Australian\$ Cost year: 2000 Time horizon: 12 months Discounting: not needed Applicability: non-applicable</p>

## 2 Pharmacological interventions for generalised anxiety disorder

### References to included studies

1. Guest JF, Russ J, Lenox SA (2005) Cost-effectiveness of venlafaxine XL compared with diazepam in the treatment of generalised anxiety disorder in the United Kingdom. *European Journal of Health Economics*, 6, 136-145.

Anxiety (update): Evidence tables for economic studies

2. Heuzenroeder L, Donnelly M, Haby MM, Mihalopoulos C, Rossell R, Carter R, Andrews G, Vos T (2004) Cost-effectiveness of psychological and pharmacological interventions for generalized anxiety disorder and panic disorder. *Australian and New Zealand Journal of Psychiatry*, 38, 602-612.
3. Iskedjian M, Walker JH, Bereza BG, Le M, Einarson TR (2008) Cost-effectiveness of escitalopram for generalized anxiety disorder in Canada. *Current Medical Research and Opinion*, 24, 1539-48.
4. Jorgensen TR, Stein DJ, Despiegel N, Drost PB, Hemels ME, Baldwin DS (2006) Cost-effectiveness analysis of escitalopram compared with paroxetine in treatment of generalized anxiety disorder in the United Kingdom. *Annals of Pharmacotherapy*, 40, 1752-1758.
5. Vera-Llonch M, Dukes E, Rejas J, Sofrygin O, Mychaskiw M, Oster G (2010) Cost-effectiveness of pregabalin versus venlafaxine in the treatment of generalized anxiety disorder: findings from a Spanish perspective. *European Journal of Health Economics*, 11, 35-44.



Anxiety (update): Evidence tables for economic studies

Study Country Study type	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: Cost-effectiveness	Comments
Guest <i>et al.</i> , 2005  UK  Cost effectiveness analysis	<u>Interventions:</u> Venlafaxine XL 75mg/day  Diazepam 5mg x 3 times/day	Adults with Generalised Anxiety Disorder  Decision-analytic modelling  Source of clinical effectiveness data: RCT [HACKET2003]  Source of resource use estimates: expert opinion  Source of unit costs: national sources	<u>Costs:</u> Medication, visits to GPs, psychiatrists, psychologists, community mental health team, counsellor  Mean cost per person: Venlafaxine XL: £352 Diazepam: £310  <u>Outcome:</u> percentage of successful treatment, defined as percentage of people in remission at 6 months; remission defined as a score on CGI = 1  Successful treatment: Venlafaxine XL: 27.6% Diazepam: 16.8% (p=0.07)	ICER of Venlafaxine XL versus diazepam: £381 per successfully treated person  Results sensitive to rates of response, remission, relapse, discontinuation, plus resource use  Probabilistic analysis: venlafaxine XL dominated diazepam in at least 25% of iterations	Perspective: NHS Currency: UK£ Cost year: 2000/01 Time horizon: 6 months Discounting: not needed Applicability: partially applicable Quality: potentially serious limitations Funded by Wyeth Pharmaceuticals
Heuzenroeder et al, 2004  Australia  Cost-utility analysis	<u>Interventions:</u> Venlafaxine 74 or 150mg/day  Standard care, defined as 27% evidence-based medicine (EBM), 28% non-EBM, and 45% no care	People with generalised anxiety disorder  Decision analytic modelling  Source of clinical effectiveness data: meta- analysis of 2 RCTs [ALLGULANDER2001; DAVIDSON1999]  Source of resource use:	<u>Costs:</u> Medication, doctor consultations  Incremental cost for all adults with GAD in Australia: Aus\$ 77 million  <u>Primary outcome:</u> number of Disability Adjusted Life Years (DALYs) saved  Incremental DALYs for all adults	ICER of venlafaxine versus standard care: \$30,000/DALY  Sensitivity analysis: ICER between \$20,000/DALY and \$51,000/DALY	Perspective: healthcare sector (including patient expenses) Currency: Australian\$ Cost year: 2000 Time horizon: 12 months Discounting: not needed Applicability: non- applicable

Anxiety (update): Evidence tables for economic studies

		assumptions	with GAD in Australia: 3300		
Iskedjian <i>et al.</i> , 2008  Canada  Cost-effectiveness analysis	<u>Interventions:</u> Escitalopram 10- 20mg/day  Paroxetine 20- 50mg/day  Both drugs were augmented with 0.5mg clonazepam, if needed; psychotherapy was provided if drug treatments failed	Newly diagnosed people with generalised anxiety disorder, with HAMA score $\geq$ 18, treated in a primary care setting  Decision analytic modelling  Source of clinical effectiveness data: double- blind RCT for response rates [BIELSKI2005], literature review and expert opinion  Source of resource use: expert opinion  Source of unit costs: Canadian national sources	<u>Costs:</u> Medication, physician visits Productivity losses  Total costs per person: Ministry of Health perspective Escitalopram: \$724; paroxetine: \$663 Societal perspective Escitalopram: \$3527; paroxetine: \$3676  <u>Primary outcome:</u> number of symptom-free days (SFDs), defined by a score of 1 or 2 in CGI-1  Number of SFDs per person: Escitalopram: 86.4 Paroxetine: 77.0	Ministry of Health perspective: ICER of escitalopram vs. paroxetine: \$6.56 per SFD (or \$2362 per symptom free year)  Societal perspective: Escitalopram dominated paroxetine  Results robust to changes in rates of response, tolerance, adherence	Perspectives: Ministry of Health and societal Currency: Canadian\$ Cost year: 2005 Time horizon: 24 weeks Discounting: not needed Applicability: partially applicable Quality: potentially serious limitations Funded by H Lundbeck
Jørgensen <i>et al.</i> , 2006  UK  Cost-effectiveness analysis	<u>Interventions:</u> Escitalopram 10- 20mg/day  Paroxetine 20- 50mg/day  Switching between the 2 drugs was allowed in case	Newly diagnosed people with generalised anxiety disorder, with HAMA score $\geq$ 18, treated in a primary care setting  Decision analytic modelling  Source of clinical effectiveness data: double- blind RCT for response and discontinuation rates	<u>Costs:</u> Medication, GP and/or psychiatrist visits Productivity losses  Total costs per person: NHS perspective Escitalopram: £447; paroxetine: £486 Societal perspective Escitalopram: £8434; paroxetine: £9843	NHS and societal perspective: Escitalopram dominated paroxetine  Results robust to changes in rates of response, tolerance, acquisition cost of paroxetine	Perspective: societal Currency: UK£ Cost year: 2005 Time horizon: 9 months Discounting: not needed Applicability: directly applicable Quality: potentially serious limitations

Anxiety (update): Evidence tables for economic studies

	of intolerance or non-response; venlafaxine was provided as 3rd line treatment if the sequence of the 2 drugs failed	[BIELSKI2005], other RCTs for relapse data & other input parameters, and further assumptions  Source of resource use: estimates based on recommendations from the previous NICE guideline on anxiety; plus expert opinion  Source of unit costs: UK national sources	<u>Primary outcome:</u> initial response and maintained response (i.e. initial response + no relapse) at the end of the time horizon; initial response defined as a reduction of score at 1 or 2 in CGI-1; relapse defined as an increase in the HAM-A total score to $\geq 15$ , an increase of CGI-S to 4 or more, or discontinuation due to lack of efficacy  Initial response: Escitalopram: 49.6% Paroxetine: 35.2% Maintained response: Escitalopram: 7.7% more responders than Paroxetine		Funded by H Lundbeck
Vera-Llonch <i>et al.</i> , 20010  Spain  Cost-utility analysis	<u>Interventions:</u> Pregabalin 300-600mg/day  Venlafaxine XL 75-225mg/day	Adults with moderate to severe Generalised Anxiety Disorder  Decision-analytic modelling  Source of clinical effectiveness data: RCT [KASPER2009]  Source of resource use estimates: published and unpublished data  Source of unit costs: national sources	<u>Costs:</u> Medication, primary care visits, specialist visits (psychiatrist, psychologist), inpatient care, emergency room, lab tests (blood counts, electrocardiogram, thyroid function)  Mean cost per person: Pregabalin: €3,871 Venlafaxine XL: €3,234  <u>Outcome:</u> number of QALYs gained  Number of QALYs per person: Pregabalin: 0.740 Venlafaxine XL: 0.713	ICER of pregabalin versus venlafaxine XL: €23,909 per QALY  Results sensitive to utility values, time horizon, discontinuation  Probabilistic analysis: pregabalin had a (roughly) 95% probability of being cost-effective compared with venlafaxine XL at a cost effectiveness threshold of approximately €25,000 per QALY	Perspective: third-party payer Currency: Euros (€) Cost year: 2007 Time horizon: 12 months Discounting: not needed Applicability: partially applicable Quality: potentially serious limitations Funded by Pfizer, Inc.

Anxiety (update): Evidence tables for economic studies

--	--	--	--	--	--

### 3 Computerised Cognitive Behavioural Therapy for panic disorder

#### References to included studies

1. Klein B, Richards JC, Austin DW (2006) Efficacy of internet therapy for panic disorder. *Journal of Behavioural Therapy*, 37, 213-238.
2. Mihalopoulos C, Kiropoulos L, Shih S-TF, Gunn J, Blashki G, Meadows G (2005) Exploratory economic analyses of two primary care mental health projects: implications for sustainability. *Medical Journal of Australia*, 183, S73-S76.

**Deleted:** <#>Kaltenthaler E, Brazier J, De NE, Tumur I, Ferriter M, Beverley C, Parry G, Rooney G, Sutcliffe P (2006) Computerised cognitive behaviour therapy for depression and anxiety update: a systematic review and economic evaluation. *Health Technology Assessment*, 10(33). 1-186. ¶

**Deleted:** <#>McCrone P, Marks IM, Mataix-Cols D, Kenwright M, McDonough M (2009) Computer-Aided Self-Exposure Therapy for Phobia/Panic Disorder: A Pilot Economic Evaluation. *Cognitive Behavioural Therapy*, 18, 1-9. ¶

Anxiety (update): Evidence tables for economic studies

| 

Deleted: <#>FearFighter¶  
¶  
Study¶  
Country¶  
Study type ... [1]

**Panic Online**

Formatted: Indent: Left: 28.8 pt, No bullets or numbering, Don't adjust space between Latin and Asian text

Study Country Study type	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: Cost-effectiveness	Comments
Klein <i>et al.</i> , 2006 [KLEIN2006]  Australia  Cost-consequence analysis	<u>Interventions:</u> cCBT (Panic Online, PO)  Therapist-assisted, self-administered CBT (self-CBT)  Information control (IC)	People with panic disorder (with or without agoraphobia)  RCT (N=55)  Source of clinical effectiveness data: RCT (n=55, Intention to treat analysis)  Source of resource use: RCT (n=46, completers only)  Source of unit costs: probably local costs	<u>Costs:</u> Therapist time, server and website hosting costs, cost of CBT manual, post and telephone calls  Total costs per person: PO: \$350 Self-CBT: \$379 IC: \$55  <u>Measures of outcome:</u> Panic Disorder Severity Scale; panic frequency; Agoraphobic Cognitions Questionnaire; Anxiety Sensitivity Profile; Depression, Anxiety and Stress Scale; Body Vigilance Scale  PO significantly better than IC in all panic parameter measures, cognitive variables, anxiety and stress variables  PO significantly better than self-CBT only in clinician agoraphobic ratings	Non-applicable	Perspective: health service (intervention costs only)  Currency: Australian\$  Cost year: not reported  Time horizon: 6 weeks  Discounting: not needed  Applicability: partially applicable  Quality: potentially serious limitations
Michalopoulos <i>et al.</i> , 2005  Australia	<u>Interventions:</u> cCBT (Panic Online, PO) provided by	People with panic disorder  Decision-analytic modelling	<u>Costs:</u> Therapist time, GP visits, cCBT package, computer and software	ICER of PO versus standard care: PO by psychologist: \$4,300/DALY averted PO by GP: \$3,200/DALY averted	Perspective: health sector (including patient expenses)

Anxiety (update): Evidence tables for economic studies

<p>Cost-utility analysis</p>	<p>either a psychologist or a GP</p> <p>Standard care, defined as 27% evidence-based medicine (EBM), 28% non-EBM, and 45% no care</p>	<p>Source of clinical effectiveness data: literature review</p> <p>Source of resource use: estimates and assumptions</p> <p>Source of unit costs: national sources</p>	<p>Total incremental cost for all adults with panic disorder in Australia:                  PO by psychologist: Aus\$3.8 million                  PO by GP: Aus\$2.8 million</p> <p><u>Measure of outcome:</u> number of DALYs averted</p> <p>Total number of DALYs averted for all adults with panic disorder in Australia:                  PO: 870</p>	<p>Sensitivity analysis – range of ICERs (\$/DALY averted):</p> <ul style="list-style-type: none"> <li>• PO by psychologist: 3,500-5,400</li> <li>• PO by GP: 2,700-3,900</li> </ul>	<p>Currency: Australian\$</p> <p>Cost year: 2004</p> <p>Time horizon: 12 weeks</p> <p>Discounting: not needed</p> <p>Applicability: not applicable</p>
------------------------------	---	--	---	--	--

## FearFighter

Study Country Study type	Intervention details	Study population Study design Data sources	Costs: description and values Outcomes: description and values	Results: Co
<p>Kaltenthaler <i>et al.</i>, 2006</p> <p>UK</p> <p>Cost-utility analysis</p>	<p><u>Interventions:</u> cCBT (FearFighter, FF)</p> <p>Clinician-led CBT</p> <p>Relaxation</p>	<p>People with panic phobia presenting in a primary care setting</p> <p>Decision analytic modelling</p> <p>Source of clinical effectiveness data: double-blind RCT for response rates [MARKS2004], other published literature</p> <p>Source of resource use: published literature, information from manufacturers of cCBT package, assumptions</p> <p>Source of unit costs: UK national sources</p>	<p><u>Costs:</u> Therapist time, computer hardware Plus for cCBT: license fees, screening of patients for suitability, capital overheads, training of staff</p> <p>Total costs per person: FF: £217 Clinician-led CBT: £410 Relaxation: £78</p> <p><u>Primary outcome:</u> QALYs</p> <p>Total QALYs per person: FF: 0.794 Clinician-led CBT: 0.805 Relaxation: 0.736</p>	<p>ICER of cli £17,608/Q</p> <p>ICER of FF £2,380/QA</p> <p>Probability effective at threshold a FF 39%</p> <p>Clinician-l Relaxation</p> <p>Results ser</p>
<p>McCrone <i>et al.</i>, 2009 [MARKS2004]</p> <p>UK</p> <p>Cost-effectiveness analysis</p>	<p><u>Interventions:</u> cCBT (FearFighter, FF)</p> <p>Clinician-led CBT</p> <p>Relaxation</p>	<p>People with panic or phobic disorder</p> <p>RCT (N=93)</p> <p>Source of clinical effectiveness data: RCT (n=62 for main problem ratings and 60 for global phobia ratings)</p> <p>Source of resource use: RCT (based on n=62 and n=60 people with main problem and global phobia ratings, respectively); plus assumptions based on published literature</p> <p>Source of unit costs: UK national sources</p>	<p><u>Costs:</u> Therapist time, cost of cCBT package</p> <p>Total costs per person: FF: £243-£328 (main problem ratings) or £248-£333 (global phobia ratings); range depending on usage of package by PCT or GP practice, respectively Clinician-led CBT: £445 Relaxation: £122</p> <p><u>Measures of outcome:</u> improvement in main problem and global phobia ratings</p> <p>Mean improvement in main problem ratings FF: 3.95 Clinician-led CBT: 3.93 Relaxation: 0.71 (differences non-significant between FF and clinician-led CBT; both significantly better than relaxation)</p> <p>Mean improvement in global phobia ratings: FF: 2.95</p>	<p><u>Main prob</u> FF domina CBT ICER of FF £64/unit o</p> <p>Probability cost-effecti 50% at a th unit of imp</p> <p>Probability being more relaxation: £100 per u</p> <p><u>Global pho</u> ICER of cli £175-£308/ ICER of FF £112/unit</p> <p>Probability cost-effecti 50% at a th per unit of</p> <p>Probability being more relaxation: £130 per u</p>

			Clinician-led CBT: 3.59 Relaxation: 1.07 (differences non-significant between FF and clinician-led CBT; both significantly better than relaxation)	Probabilist comparing CBT not c
--	--	--	---	---------------------------------------