



Costing Clinical Guidelines:
Depression (England and Wales)

National Institute for Clinical Excellence

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EXECUTIVE SUMMARY

Background

This is the third clinical guideline that has been costed for the National Institute of Clinical Excellence. The costing method adopted is specific to this guideline and uses the most accurate data available at the time.

This review covers the cost impact of the treatment of depression in both England and Wales. Our research has shown that there are no appreciable differences in how the two countries manage depression.

The review process

The review followed a structured approach involving:

- background research into the guideline content, current clinical practice, published information and data
- the development of models to identify the clinical and financial impact of the guideline
- testing of assumptions, models and conclusions
- production of a final report encompassing research, results and conclusions.

Scope of the review

Because of the breadth and complexity of the guideline, and building on lessons from the first two costing exercises, we agreed with NICE to limit our review to a set of key areas. These were identified in conjunction with the Guideline Development Group and were in alignment with the implementation priorities identified in the guideline. These key areas followed the stepped approach to managing depression that the guideline has identified.

The key areas we examined were:

- mild depression: the cost of Introduction of watchful waiting, guided self-help, exercise and brief psychological interventions for people with mild depression
- mild depression: the savings from decreased prescribing of antidepressants for mild depression
- moderate and severe depression: the savings from changing prescribing practice of antidepressants
- moderate and severe depression: the cost of a potential increase in demand for psychological interventions
- moderate and severe depression: the cost of providing telephone support for patients taking antidepressants
- recurrent depression: the cost of treating patients with antidepressants for 2 years
- Treatment-resistant depression: the cost of providing both antidepressants and psychological interventions
- chronic depression: the cost of providing both antidepressants and psychological interventions.

A key constraint to our work was the lack of systematically collected data; for instance, the actual number of patients presenting to primary care with depression-associated problems is not known. This lack of data led us to make a series of assumptions that we then tested to ensure the robustness and validity of our cost estimates. These assumptions are set out in section 3 of the report.

Key conclusions

Mild depression

The impact on the on the management of mild depression is significant. The breakdown of costs for both England and Wales can be seen in the following Figure. The reason for this considerable cost is that currently psychological interventions are provided in an extremely limited way.

Mild depression intervention	England (£1000s)	Wales (£1000s)
Watchful waiting	900	100
Exercise	4,700	300
Guided self-help	1,400	100
Brief psychological interventions	10,400	600
Reduction in number taking ADs	-5,000	-300
Total	12,400	800

Moderate and severe depression

The main consequence of the guideline, with respect to moderate and severe depression, is the need to provide psychological interventions for patients that require them, along with a telephone support service to enhance compliance with treatment regimes. The costs can be seen in the following Figure.

Moderate and severe depression	England (£1000s)	Wales (£1000s)
Psychological interventions	13,200	800
Reduction in ADs and GP visits	-2,600	-200
Change in unit cost of ADs	-4,400	-300
Telephone support service	4,800	300
Net cost	11,000	600

Treatment-resistant, recurrent and chronic depression

The main cost driver in this group is again the provision of psychological interventions for up to 20 weeks. The combined costs of these treatments can be seen in the following Figure.

Recurrent/chronic depression	England (£1000s)	Wales (£1000s)
Extended treatment for recurrent depression	3,700	200
Psych interventions treatment-resistant depression	19,400	1,100
Psych interventions chronic depression	8,000	500
Total	31,100	1,800

1 Introduction

1.1 Context of the review

In December 2003, Secta was commissioned by the National Institute for Clinical Excellence (NICE) to undertake a study estimating the financial impact of guideline implementation on the National Health Service (NHS).

1.1.1 The first two stages of the study looked at the cost impact of the fertility and guideline in England and Wales and the familial breast cancer guideline in England.

1.1.2 This review is the final stage of the study that Secta is involved in and estimates the cost impact of the depression guideline in England and Wales. In future, the financial impact of guidelines will continue to be estimated as an integral part of guideline development.

1.2 The review process

1.2.1 The review process followed a standard format that built on experience and lessons learnt from the first two guidelines.

1.2.2 The method used in the review followed a structured approach and consisted of the following stages.

- Background research into the guideline content, current clinical practice, published information and data.
- The development of models to identify the clinical and financial impact of the guideline.
- Testing of assumptions, models and conclusions.
- Production of a final report encompassing research, results and conclusions.

1.2.3 The key learning points that we incorporated from our work in costing the first two guidelines were as follows.

- The level of information, both in terms of clinical outcomes and cost measures, that is systematically collected and available is extremely limited.
- The lack of hard data leads to problems in building a comprehensive bottom-up model and acts as a significant constraint to accurate costing.
- As a consequence of this it is necessary to approach data collation in a pragmatic fashion and to use a number of assumptions to build the costing model.
- These assumptions need to be tested with key clinicians and experts in the field in order to ensure robustness.
- A top-down approach to costing is required to triangulate and sense check our findings and assumptions.

- This approach requires the costing aspect of the review to be focused on a set of discrete cost drivers, rather than the entire guideline.

1.3 The scope of the review

- 1.3.1 In order to understand the key clinical implications and cost drivers with respect to the management and treatment of depression, we researched the entirety of the guideline. As a consequence, we were able to identify the key areas that would feed into our costing work.
- 1.3.2 Having undertaken this initial research, we agreed with NICE to limit the scope of our work to these discrete areas. The Guideline Development Group (GDG) aided us in the identification of these key areas at the outset of the review process and they can be seen in the following table:

Figure 1 – Key areas of the review

Key areas
Mild depression: the cost of Introduction of watchful waiting, guided self-help, exercise and brief psychological interventions for people with mild depression
Mild depression: the savings from decreased prescribing of antidepressants for mild depression
Moderate and severe depression: the savings from changing prescribing practice of antidepressants
Moderate and severe depression: the cost of a potential increase in demand for psychological interventions
Moderate and severe depression: the cost of providing telephone support for patients taking antidepressants
Recurrent depression: the cost of treating patients with antidepressants for 2 years
Treatment-resistant depression: the cost of providing both antidepressants and psychological interventions
Chronic depression: the cost of providing both antidepressants and psychological interventions

2 Background

2.1 Introduction

2.1.1 The NICE guideline outlines recommendations for the identification, treatment and management of depression in primary and secondary care. It excludes the treatment of depression in children, being specific to adults over the age of 18 years.

2.2 Definitions of depression

2.2.1 Depression is a heterogeneous diagnosis; however, it is characterised by a depressed mood, or loss of pleasure in everyday activities. The classification used in the NICE guideline is from the World Health Organization's (WHO) International Classification of Disease (ICD-10). This describes ten key symptoms that are present in a major depressive episode, which are as follows:

- depressed mood
- loss of interest and enjoyment
- reduced energy leading to increased fatigability and diminished activity
- reduced concentration and attention
- reduced self-esteem and self-confidence
- ideas of guilt and unworthiness (even in a mild type of episode)
- bleak and pessimistic views of the future
- ideas or acts of self-harm or suicide
- disturbed sleep
- diminished appetite.

2.2.2 There are a number of subtypes of depression that are referred to in the guideline; brief descriptions of these can be found in the following paragraphs.

Mild depressive episode

2.2.3 Mild depression is characterised by the presence of four of the above symptoms for at least 2 weeks.

Moderate depressive episode

2.2.4 Moderate depression is characterised by the presence of six of the above symptoms. The minimum duration of the episode is 2 weeks, with a considerable impact on functional ability of the individual.

Severe depressive episode

2.2.5 Severe depression is characterised by the presence of seven or more of the above symptoms, some of which will be of severe intensity. The episode will normally have

been present for at least 2 weeks, although in some circumstances if the symptoms are particularly severe, the diagnosis can be made sooner than this. The functional impact on the sufferer is likely to be severe.

Recurrent depressive episode

- 2.2.6 This is characterised by repeated episodes of depression, without any intercurrent episodes of mood elevation or overactivity.
- 2.2.7 In the context of the guideline, recommendations regarding recurrent depression and drug therapy refer to individuals who have had “two or more depressive episodes in the recent past, and who have suffered significant functional impairment” (NICE guideline paragraph 1.6.3.1).

Chronic depression

- 2.2.8 Chronic depression is diagnosed when a person meets the diagnostic criteria for depression for at least 2 years.

Treatment-resistant depression

- 2.2.9 Treatment-resistant depression is defined in the NICE guideline as that which fails to respond to two or more antidepressants given sequentially at an adequate dose for an adequate time (NICE guideline paragraph 1.6.2).

2.3 Problems with the classification of depression

- 2.3.1 Having outlined the official definitions of depression, it is necessary to be aware that there are problems with these. As stated earlier, depression is heterogeneous diagnosis. This is noted by the Guideline Development Group in the introduction to the guideline, from where the following excerpt is quoted:

“However, the most significant limitation is with the concept of depression itself. The view of the Guideline Development Group is that it is too broad and heterogeneous a category, and has limited validity as a basis for effective treatment plans. A focus on symptoms alone is not sufficient because a wide range of biological, psychological and social factors have a significant impact on response to treatment and are not captured by the current diagnostic systems.”

- 2.3.2 The impact that this has is most marked in primary care, where the majority of patients with depression are managed. From our research, it appears that few practitioners make a distinction between a mild major depressive episode and a minor depressive episode. The diagnosis and treatment of these two groups is, therefore, usually the same. However, because the guideline excludes minor depression, the calculations in this report also exclude the incidence of minor depression and include only the cost of mild depression.

2.4 Epidemiology and diagnosis of depression

Prevalence

- 2.4.1 The most recent National Psychiatric Morbidity Survey (2001) revealed the point prevalence for major depression to be 26 per 1000 population. The major factors influencing this level are age, sex, ethnicity and socioeconomic status.

Incidence

- 2.4.2 Recently published Scottish data reveal an overall annual incidence of depression of 38 per 1000 adult population. The full details can be seen at www.isdscotland.org/isd/info3.jsp?p_service=Content.show&pContentID=2618&p_applc=CCC&)
- 2.4.3 Recently collected data from a London GP surgery, which is currently unpublished, shows an incidence of 28 per 1000 population.
- 2.4.4 Conversion of the point prevalence from the Psychiatric Morbidity Survey into an annual incidence gives a rate of 36 per 1000 population. The assumptions that enabled us to convert prevalence into incidence can be found in Appendix A. The incidence of minor depression was then subtracted from this because it has been excluded from this costing exercise.

Diagnosis and detection

- 2.4.5 Depression is underdiagnosed for two main reasons.
- At least one quarter of patients with symptoms of neurosis are unlikely to attend a medical practitioner (Meltzer et al, 2000).
 - Of those patients attending a GP, only 50% are likely to be recognised as having depression because they consult for a somatic symptom rather than depression (Kisely et al, 1995).
- 2.4.6 The consequence of this is that approximately only 37.5% of individuals with an episode of depression are actually diagnosed and initiated on a treatment regime.

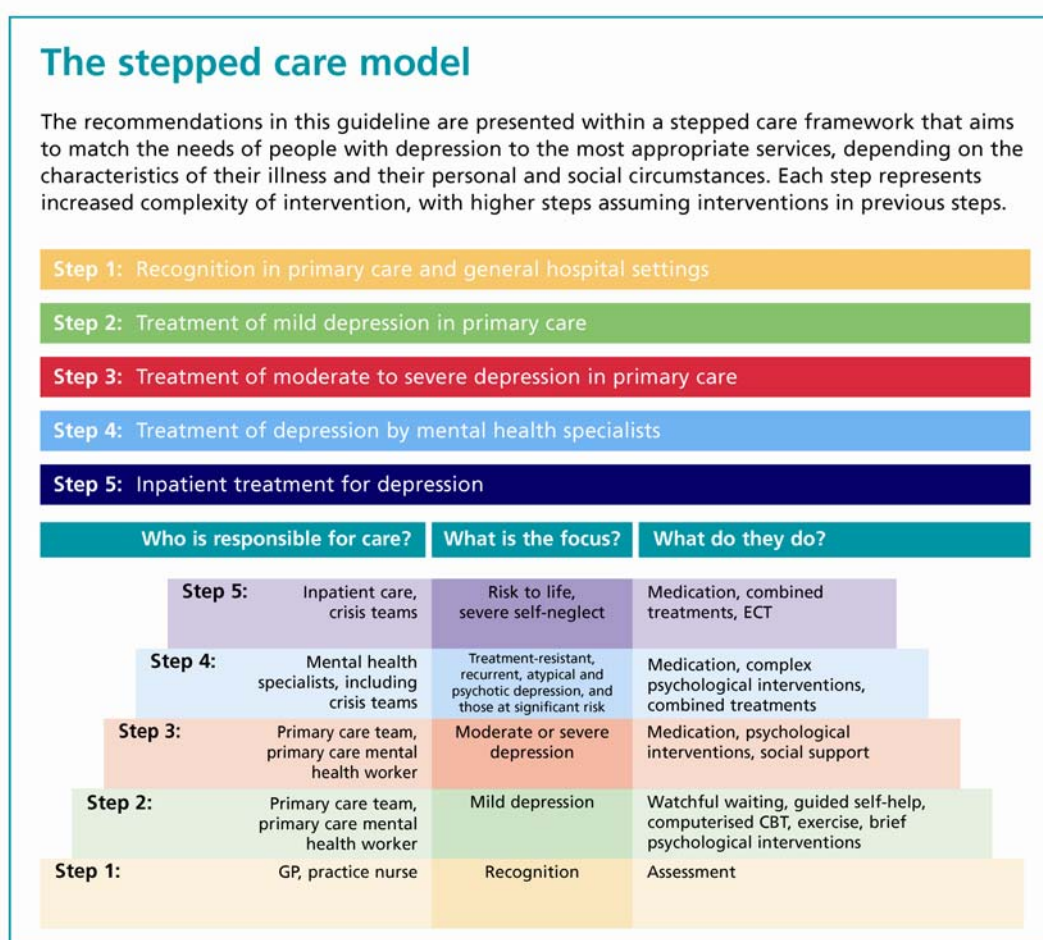
2.5 Current practice

- 2.5.1 In order to gauge current practice, we conducted a series of interviews with a number of practitioners. These included GPs, psychologists, psychiatrists and specialist nurses.
- 2.5.2 It appears that the majority of primary care practitioners do not use the formal ICD-10 classification when diagnosing depression, because of the reasons outlined in the previous section. GPs tend to use a group of questions that, in conjunction with their knowledge of the patient's past medical and social history, enables them to make a correct diagnosis.

2.6 Future practice

2.6.1 The guideline recommends a stepped approach to the management and treatment of depression. Obviously, this is just a schematic representation and does not represent a rigid treatment regimen. The stepped approach can be seen in the following Figure:

Figure 2



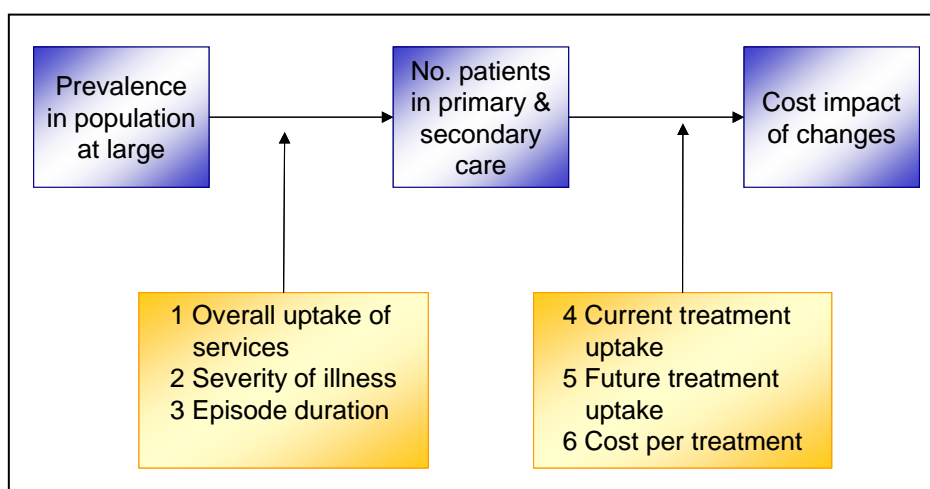
Source: NICE guideline on depression, 2004 (www.nice.org.uk/CG023NICEguideline)

3 Modelling and assumptions

3.1 Model

- 3.1.1 The model has a bottom-up structure, starting with the prevalence of depression in the population, and building up to the cost impact of the guidelines. The steps that it goes through are illustrated in the diagram below.

Figure 3 Diagram of the modelling methodology



- 3.1.2 The model takes assumptions about the overall uptake of services, the split between the different levels of severity and the average duration of an episode to calculate the incidence of depression in the community and the number of patients in primary and secondary care at any one time. It then uses assumptions about what treatments these patients are currently receiving and what treatments they will receive with the implementation of the guideline. This information, combined with the unit cost of each treatment option, gives the total cost impact of the guideline.
- 3.1.3 The guideline promotes more effective treatment for patients with depression and we would expect that, as a result, patients receiving more appropriate treatment are less likely to have a future episode of depression or deteriorate to severe depression. It seems likely that the true long-term impact of the guideline should result in a decrease in the incidence and cost of depression. However, because there is no empirical evidence on which to base assumptions about these improvements, it is not possible to factor these benefits into the model.

3.2 Assumptions

- 3.2.1 A full list of the model's assumptions is given in Appendix A.

3.2.2 In the assumptions we have accounted for the following factors.

- Only 75% of patients with depression will see their GP, and of these only 50% will have their depression identified.
- Some patients who are prescribed antidepressants will not take the full course.
- Some patients who are offered treatments – including watchful waiting, guided self-help, exercise, psychological interventions – will either not turn up at all or will not return after some initial sessions.
- Psychological interventions are currently limited in availability and, if they become more available, more GPs and patients are likely to choose them over antidepressants.

3.3 Key workers

3.3.1 In order to cost the guideline, we have had to identify which healthcare professionals are going to perform the various roles and treatments. These can be seen in the following sections.

Primary mental healthcare workers

3.3.2 The role of primary mental healthcare worker (PMHCW) is a new post that came into being in April 2004. Currently there are 1000 of these workers, with the majority being recent psychology graduates. The exact role that these individuals are currently filling is not clearly defined. Following discussions with practitioners, it appears that PMHCWs would be able to fulfil a number of the roles in the guideline. These include the following:

- the follow-up visit in watchful waiting
- explanation and supervision of guided self-help
- provision of the telephone support service.

Counsellors

3.3.3 It is envisaged that counsellors, fully trained in cognitive behavioural therapy (CBT), would undertake the brief psychological interventions recommended for patients with mild depression. This would consist of six 45–60 minute sessions and would require formal supervision for the counsellors.

Clinical psychologists and community psychiatric nurses

3.3.4 We envisage extended psychological interventions being undertaken by either clinical psychologists or community psychiatric nurses (CPNs). The guideline recommends that patients have a 16–20 week course of therapy and, again, the professionals would require supervision.

4 Costing of the guideline

4.1 Current and future models of care

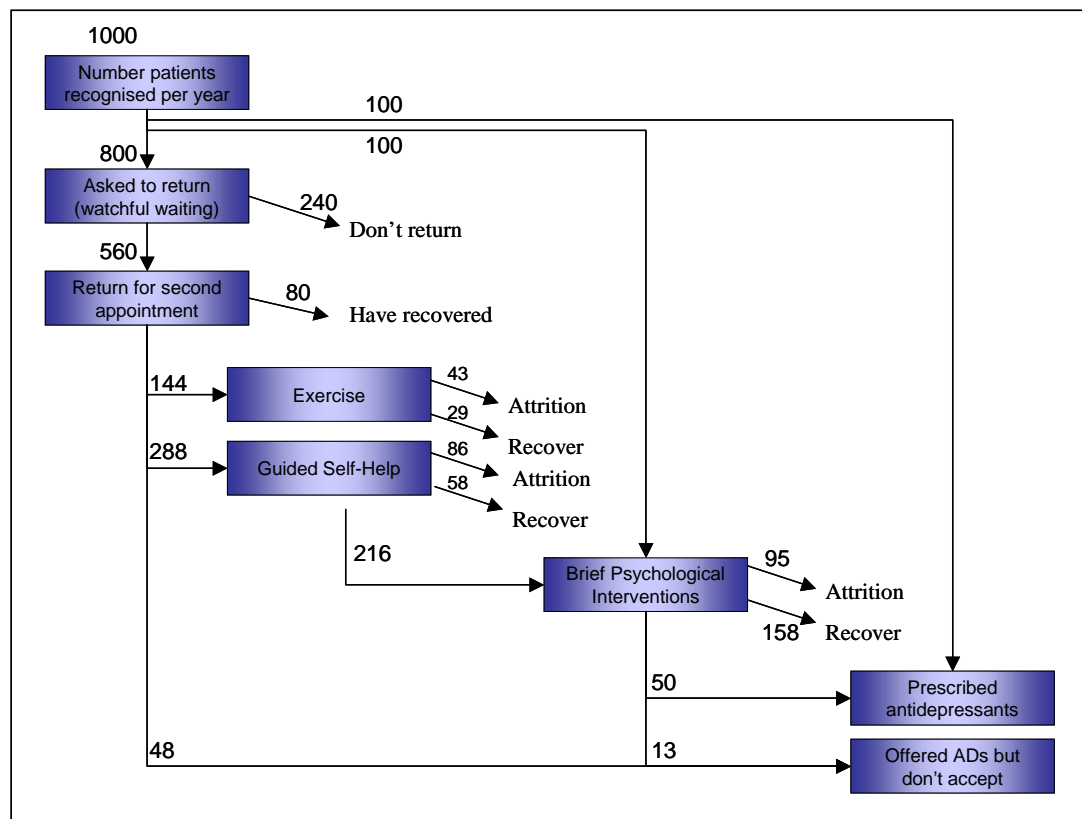
4.1.1 The current treatment for patients diagnosed with mild depression is a course of antidepressants. Although many patients would prefer psychological intervention for their illness, this is not widely available.

4.1.2 The guideline recommendations for mild depression are as follows.

- If appropriate, GPs practice watchful waiting, reviewing patients after a period of 2 weeks.
- If the illness has not resolved, patients are offered guided self-help or a funded exercise regime.
- If still unresolved, patients are offered brief psychological interventions..
- Antidepressants are prescribed as a last resort in mild depression.
- This pathway is not rigid, however, with patient circumstances and choice being taken into account.

4.1.3 This future model of care described above can be seen in the following Figure.

Figure 4 Mild depression patient flows



4.2 Watchful waiting

4.2.1 The main cost of watchful waiting is due to patients requiring an extra appointment with a GP. Assuming a 30% attrition rate, this equates to an additional annual cost of £900,000 for England and £100,000 for Wales.

4.3 Guided self-help and exercise

4.3.1 Patients who do not recover after a period of watchful waiting will be offered guided self-help or access to an exercise regime. The cost of providing these interventions in England and Wales can be seen in Figure 5.

4.3.2 For the purposes of this document we have included the total cost of providing an exercise programme; however, we recognise that this may not fall on the NHS in its entirety, with local arrangements likely to be made between health providers and local councils.

Figure 5 Cost of guided self-help and exercise

Mild depression intervention	England (£1000s)	Wales (£1000s)
Exercise	4,700	300
Guided self-help	1,400	100

4.4 Brief psychological interventions

4.4.1 Patients who require additional treatment will be offered a course of brief psychological interventions. This is likely to be performed by trained counsellors and will consist of an initial hour-long assessment with six follow-up appointments. We have again factored in an attrition rate of 30%.

4.4.2 The cost of providing this service for patients with mild depression is £10.4 million in England and £600,000 in Wales.

4.5 Antidepressant prescribing

4.5.1 With the increased provision of exercise and psychological interventions, there is a consequent reduction in the number of patients with mild depression requiring antidepressants. This results in a saving of £5.0 million in England and £300,000 in Wales.

4.5.2 This saving is made up of two components: the cost of the antidepressants and the reduction in number of visits to GPs. We have estimated that with the change in practice, patients are likely to visit their GPs three times less frequently over the course of their illness.

4.6 Overall cost impact of mild depression

4.6.1 The overall cost impact of the guideline with respect to mild depression is £12.4 million in England and £800,000 in Wales per annum. This is summarised in the following table.

Figure 6 Total cost impact of mild depression

Mild depression intervention	England (£1000s)	Wales (£1000s)
Watchful waiting	900	100
Exercise	4,700	300
Guided self-help	1,400	100
Brief psychological interventions	10,400	600
Reduction in number taking ADs	-5,000	-300
Total	12,400	800

5 Moderate and severe depression

5.1 Current and future models of care

5.1.1 The current mainstay of treatment for patients diagnosed with moderate depression is a course of antidepressants. Although many patients would prefer psychological intervention for their illness, this is not widely available.

5.1.2 The guideline recommendations for patients with moderate and severe depression are as follows.

- Antidepressants should remain the first-line treatment in this group.
- Extended psychological intervention (16–20 sessions) should be available for those patients who have previously not responded well to antidepressants or for those not wishing to take antidepressants.
- The first-line antidepressants should be selective serotonin reuptake inhibitors (SSRIs).
- Patients with chronic depression (as defined in section 2.2.8) should be offered a combination of antidepressants and psychological interventions.
- Telephone support should be offered to patients on antidepressants to improve compliance and the efficacy of these treatments.

5.2 Antidepressant use

5.2.1 As outlined in the previous section, antidepressants remain the first-line treatment for this group. We have therefore assumed that the number of people falling into this category will not change under the new guidelines.

5.2.2 The major change in antidepressant usage in this group is the type of drug prescribed. The guideline recommends that generic SSRIs are used as the first-line treatment and also makes additional recommendations about second-line and combination treatments.

5.2.3 The current breakdown of antidepressant prescribing can be seen in the Figure 6. As can be seen, SSRIs are the most commonly prescribed antidepressant type, 63% of the total. There are several individual drugs that make up a significant proportion of the total: fluoxetine, citalopram and paroxetine (which are all generic SSRIs) and venlafaxine, a noradrenaline and serotonin reuptake inhibitor.

5.2.4 In section 1.6.2.6, the guideline recommends that before prescribing venlafaxine:

“practitioners should take into account the increased likelihood of patients stopping treatment due to side effects, compared with equally effective SSRIs, its higher propensity for discontinuation symptoms if stopped abruptly, its toxicity in overdose and its higher cost”.

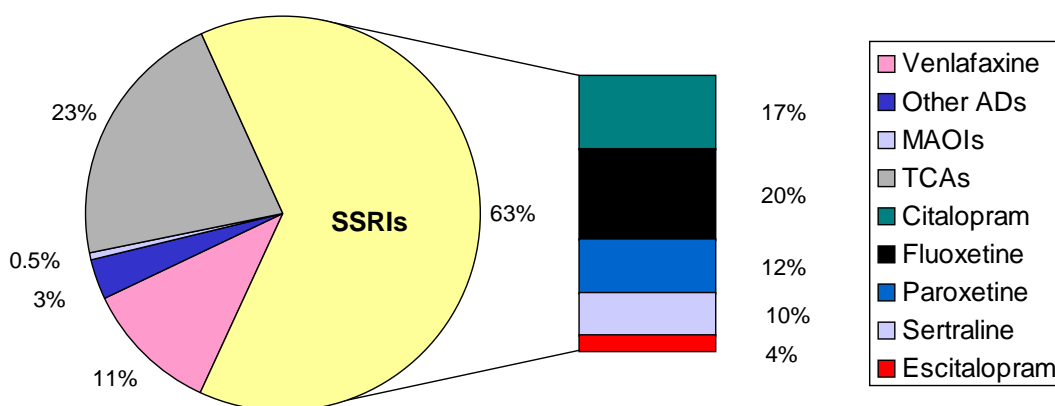
In section 1.5.2.16 and 1.5.2.17, guideline also recommends that:

“Venlafaxine treatment should only be initiated by specialist mental health medical practitioners including General Practitioners with a Special Interest in Mental Health.

Venlafaxine treatment should only be managed under the supervision of specialist mental health medical practitioners including General Practitioners with a Special Interest in Mental Health.”

5.2.5 As a consequence, we have remodelled the breakdown of antidepressants, with an increase in generic SSRIs, a gradual decrease in tricyclic antidepressants and a more rapid decrease in the proportion of venlafaxine. The result of this is to decrease the weighted average unit cost of a month’s supply of antidepressants from £14 to £12. The overall saving from this recommendation is £4.4 million for England and £300,000 for Wales.

Figure 7 Current breakdown of antidepressant usage



5.3 Psychological interventions

5.3.1 From available research and from discussions with clinicians, it appears that a considerable number of patients with moderate and severe depression would choose to undertake a course of cognitive behavioural therapy rather than take antidepressants. However, there is currently an extensive waiting period to access this type of treatment, due to a shortage of trained professionals in post, with patients waiting anything up to 1 year.

5.3.2 It is difficult to accurately assess what proportion of patients with moderate and severe depression would choose psychological treatments rather than antidepressants, due to lack of current availability of empirical research. Because of this lack of information it is not possible to state with confidence what the shift will be, although from conversations with clinicians we believe it will be substantial. We have therefore modelled a shift from antidepressants to psychological interventions of 10%

of patients with moderate and severe depression; it could be, however, that this figure underestimates the financial impact for the reasons outlined.

5.3.3 This shift has three components.

- The provision of a 16-20 week course of cognitive behavioural therapy by a trained psychologist or community psychiatric nurse.
- The reduction in number of antidepressants prescribed.
- The reduction in number of GP visits made by these patients (because they are under the care of another healthcare professional).

5.3.4 These individual figures, along with the net cost, can be seen in the following Figure.

Figure 8 Net cost of psychological interventions in moderate and severe depression

Moderate and severe depression	England (£1000s)	Wales (£1000s)
Psychological interventions	13,200	800
Reduction in ADs and GP visits	-2,600	-200
Net cost	10,600	600

5.4 Telephone support service

5.4.1 The guideline recommends the use of a telephone support service to encourage individuals to be compliant with antidepressant treatment and to give advice regarding side effects and so forth.

5.4.2 We envisage this service being undertaken by graduate primary mental healthcare workers, with patients receiving a telephone call on average every 2 months.

5.4.3 The cost of implementing this service is £4.8 million in England and £300,000 in Wales.

5.5 Total cost impact

5.5.1 The total cost impact of the guideline's recommendations for moderate and severe depression can be seen in the following Figure.

Figure 9 Total cost of moderate and severe depression

Moderate and severe depression	England (£1000s)	Wales (£1000s)
Psychological interventions	13,200	800
Reduction in ADs and GP visits	-2,600	-200
Change in unit cost of ADs	-4,400	-300
Telephone support service	4,800	300
Net cost	11,000	600

6 Recurrent and treatment-resistant depression

6.1 Current and future models of care

6.1.1 The current model of care for these patients varies widely. There does not appear to be a consistent approach in these patient groups. The guideline recommends that patients in this group should be managed by specialist mental health professionals, either in a secondary care setting or attached to a primary care mental health team.

6.1.2 The recommendations in the guideline which we have costed are as follows.

- Patients with treatment-resistant depression (as defined in section 2.2.9) should be offered the combination of antidepressants and psychological interventions.
- Patients with recurrent depression (as defined in section 2.2.7) should be offered antidepressant treatment for 2 years.

6.2 Treatment-resistant depression

6.2.1 As outlined in the section on moderate and severe depression, the availability of psychological interventions is limited. We have therefore assumed that 90% of patients with treatment-resistant depression do not currently receive this treatment. The cost of providing a full course of CBT, as well as antidepressants, to these patients is £19.4 million in England and £1.1 million in Wales.

6.3 Recurrent depression

6.3.1 Current treatment for recurrent depression varies, with few people receiving antidepressants for the 2 years recommended by the guideline. Discussions with clinicians appear to indicate that most patients would be resistant to taking antidepressants for this period of time. We have therefore costed the impact of 25% of patients in this group taking antidepressants for the 2-year period.

6.3.2 The impact of this interventions is £3.7 million in England and £200,000 in Wales.

6.4 Psychological interventions in chronic depression

6.4.1 The guideline recommends that patients with chronic depression should be offered a combination of antidepressants and psychological interventions as first-line treatment. Since CBT is not widely available currently, the cost impact with chronic depression relates to providing this. As for treatment-resistant depression, we have assumed that 90% of patients with chronic depression currently do not currently receive this treatment. In England this amounts to £8 million and in Wales to £500,000..

7 Sensitivity analysis

7.1 Methodology

7.1.1 There are a number of assumptions in the model that are critical to the cost impact of the guideline but for which there is no empirical evidence on which to base their values. We called on experts to give us estimates for these parameters, and we performed a sensitivity analysis on the model so that we can understand how the uncertainty of these values affect the total cost impact.

7.1.2 The sensitivity analysis was performed using software called “@RISK”, and the assumptions which we varied are summarised in Figure 10 below:

Figure 10 Parameters varied in sensitivity analysis

Parameters varied in sensitivity analysis	Baseline value	Scenario range
Proportion of patients with recurrent depression as a fraction of all types of depression:		
<i>Mild</i>	16%	+/- 5%
<i>Moderate</i>	20%	+/- 5%
<i>Severe</i>	40%	+/- 5%
Proportion of chronic depression as a fraction of all types:		
<i>Mild</i>	10%	+/- 5%
<i>Moderate</i>	10%	+/- 5%
<i>Severe</i>	10%	+/- 5%
Proportion of treatment-resistant depression as a fraction of all types		
<i>Mild</i>	0%	
<i>Moderate</i>	10%	+/- 5%
<i>Severe</i>	10%	+/- 5%
Average duration of an depressive episode - including any time before and after it is identified		
<i>Mild</i>	6 months	+/- 2 months
<i>Moderate</i>	6 months	+/- 2 months
<i>Severe</i>	9 months	+/- 3 months

7.2 Impact of sensitivity analysis on costs

7.2.1 The impact of the sensitivity analysis is provided in Figure 11 and Figure 12. This shows the minimum and maximum values of each cost element. Note that we have not provided subtotals and a net total in these figures. This is because the minimum or maximum values of different lines would not occur simultaneously with any scenario.

7.2.2 This is because, for example, the scenario that gives the largest cost impact in watchful waiting is that which has the largest number of patients with mild depression, so it would actually give the **largest** saving from the reduction of patients taking antidepressants for mild depression.

Figure 11 Results of sensitivity analysis for England

	Cost £1000s	Minimum £1000s	Maximum £1000s
Mild Depression			
Watchful waiting	900	600	1,400
Exercise	4,700	3,300	7,200
Guided self-help	1,400	1,000	2,200
Brief psychological interventions	10,400	7,400	16,100
Reduction in number taking ADs	-5,000	-7,700	-3,500
Subtotal	12,400		
Moderate/Severe Depression			
Psychological interventions for moderate/severe depression	13,200	9,100	20,100
Reduction in number with mod/severe depression taking ADs	-2,600	-3,900	-1,800
Change in unit cost of ADs	-4,400	-5,200	-3,100
Subtotal	6,200		
Telephone support service			
Telephone support service	4,800		
Recurrent/Chronic Depression			
Extended duration of treatment for recurrent depression	3,700	2,600	5,400
Provision of psy int's for refractory depression	19,400	9,700	36,600
Provision of psy int's for chronic depression	8,000	4,500	10,800
Subtotal	31,000		
Total Cost			
Net cost impact	54,500		

Figure 12 Results of sensitivity analysis for Wales

	Cost £1000s	Minimum £1000s	Maximum £1000s
Mild Depression			
Watchful waiting	100	0	100
Exercise	300	200	300
Guided self-help	100	100	100
Brief psychological interventions	600	400	600
Reduction in number taking ADs	-300	-500	-300
Subtotal	700		
Moderate/Severe Depression			
Psychological interventions for moderate/severe depression	800	600	800
Reduction in number with mod/severe depression taking ADs	-200	-200	-200
Change in unit cost of ADs	-300	-300	-200
Subtotal	300		
Telephone support service			
Telephone support service	300		
Recurrent/Chronic Depression			
Extended duration of treatment for recurrent depression	200	100	200
Provision of psy int's for refractory depression	1,100	500	1,200
Provision of psy int's for chronic depression	500	300	500
Subtotal	1,800		
Total Cost			
Net cost impact	3,200		

8 Conclusion

8.1 Identification of key cost areas

8.1.1 Having defined the key cost drivers, as outlined in the introduction, we are confident that we have been able to capture the significant costs relating to the guideline.

8.2 Total cost in England

8.2.1 The total cost impact in England amounts to £55 million. The breakdown of this sum (which has been outlined in the previous sections) can be seen in the following Figure.

Figure 13 Total cost impact in England

	Cost £1000s
Mild Depression	
Watchful waiting	900
Exercise	4,700
Guided self-help	1,400
Brief psychological interventions	10,400
Reduction in number taking ADs	-5,000
Subtotal	12,400
Moderate/Severe Depression	
Psychological interventions for moderate/severe depression	13,200
Reduction in number with mod/severe depression taking ADs	-2,600
Change in unit cost of ADs	-4,400
Subtotal	6,200
Telephone support service	
Telephone support service	4,800
Recurrent/Chronic Depression	
Extended duration of treatment for recurrent depression	3,700
Provision of psy int's for refractory depression	19,400
Provision of psy int's for chronic depression	8,000
Subtotal	31,000
Total Cost	
Net cost impact	54,500

8.3 Total cost in Wales

8.3.1 The total identified cost impact of the guideline in Wales is £3.3 million. This can be seen in the following Figure.

Figure 14 Total cost impact Wales

	Cost £1000s
Mild Depression	
Watchful waiting	100
Exercise	300
Guided self-help	100
Brief psychological interventions	600
Reduction in number taking ADs	-300
Subtotal	700
Moderate/Severe Depression	
Psychological interventions for moderate/severe depression	800
Reduction in number with mod/severe depression taking ADs	-200
Change in unit cost of ADs	-300
Subtotal	300
Telephone support service	
Telephone support service	300
Recurrent/Chronic Depression	
Extended duration of treatment for recurrent depression	200
Provision of psy int's for refractory depression	1,100
Provision of psy int's for chronic depression	500
Subtotal	1,800
Total Cost	
Net cost impact	3,200

8.4 Current provision of PCMHWs

8.4.1 In April 2004, 1000 PCMHWs were recruited and funded by the Department of Health to provide assistance to PCTs with provision of basic mental health services, part of which includes management of patients with depression. However, they also provide assistance with other areas of mental health such as anxiety and stress management.

8.4.2 Following discussions with supervisors of these workers, we have estimated that around 25% of their time is currently taken up with interventions for patients with depression, which overlaps with the service we have anticipated these workers providing with the new measures in the guideline. Hence, 25% of the cost of providing these workers has already been met (and will continue to be so) with central funding. This equates to a potential reduction in the total cost of the guideline of £6.5 million.

8.5 Workforce planning

8.5.1 As well as the cost of the guideline, there is also an impact on workforce requirements. The guideline will require additional primary care mental health workers

as well as nurses and clinical psychologists trained in CBT. The requirements are summarised below.

- A total of 397 graduate workers England and 23 in Wales would be required to provide guided self-help and telephone support.
- An additional 301 trained professionals in England and 18 in Wales to provide brief psychological interventions for mild depression.

8.5.2 An additional 569 trained professionals in England and 34 in Wales to provide full CBT for patients with moderate and severe depression. However, as mentioned in 8.4.2 plans are already in place to provide 1000 PCMHWs, of which, 250 (25%) are estimated to be undertaking interventions for patients with depression.

8.6 Summary

8.6.1 Using a bottom-up approach to data collection, in conjunction with a top-down sense check, we developed a national picture of current practice that we were then able to compare with the guideline's recommendations.

8.6.2 We concluded that our assessment was reasonable, given the limited data in this field and the time available to us. However these assessments are estimates and not an irrefutable proof of the cost impact of the guideline.

Appendix A – Assumptions

Introduction

The following table details all the assumptions used in building up the cost impact of the NICE guidelines on depression.

Figure 15 - Prevalence and incidence assumptions

Assumption	Evidence
1. The 1-week prevalence of major depression in the population at large is 26 per 1000 population	Psychiatric Morbidity Survey (2001)
2. The 1-week prevalence of minor depression is 32 per 1000 population	Psychiatric Morbidity Survey (2001) found 1-week period prevalence of 'mixed anxiety and depression' was 88 per 1000 population, of whom 67% had symptoms in anxiety and depression. We therefore assumed half of these would have predominantly depressive symptoms and fall under the definition of mild depression.
3. Overall the breakdown by severity of depression is: <ul style="list-style-type: none"> ▪ Mild – 70% ▪ Moderate – 20% ▪ Severe – 10% 	Expert advice
4. The proportion of these which have recurrent depression: <ul style="list-style-type: none"> ▪ Mild – 16% ▪ Moderate – 20% ▪ Severe – 40% 	Expert advice
5. The proportion which have chronic depression are: <ul style="list-style-type: none"> ▪ Mild – 10% ▪ Moderate – 10% ▪ Severe – 10% 	Expert advice
6. The proportion which have	Expert advice (refractory is defined as

refractory depression: <ul style="list-style-type: none"> ▪ Mild – 0% ▪ Moderate – 10% ▪ Severe – 10% 	completion of two courses of antidepressants with persistent depression. The overall failure rate per antidepressant course is approximately 33%, resulting in the 10% figure)
7. The proportion of people with atypical depression is small compared to those with standard, refractory, chronic or recurrent depression.	Expert advice
8. The proportion of people with a depressive episode who will be identified by a GP is 37.5%	This is in line with research by H Meltzer that shows 25% of depressed patients don't seek help; and other research that shows approximately 50% of those who go to a GP have their depression undetected
9. The proportion of people with a detected depressive episode in primary care who will be referred to secondary or tertiary care are: <ul style="list-style-type: none"> ▪ Mild – 0% ▪ Moderate – 14% ▪ Severe – 40% (This equates to 7% overall)	Expert advice
10. The average duration of a depressive episode is 6 months for mild and moderate depression and 9 months for severe depression; except for chronic episodes which last 24 months.	Expert advice
11. The proportion of patients in primary or secondary care who will receive antidepressants currently is 80% (although these will not all comply with the full course of treatment)	Expert advice
12. Psychological interventions are not currently available to all who require them. An additional 10% of patients with moderate or severe depression will choose psychological interventions instead of antidepressants with the	Expert advice

guidelines.	
13. Other than the 10% of patients who take up psychological interventions, the number of patients on antidepressants for moderate and severe depression will not change.	Expert advice
14. The rate of non-compliance to antidepressant treatment is: <ul style="list-style-type: none"> ▪ Mild – 50% ▪ Moderate – 30% ▪ Severe – 25% ▪ All recurrent, chronic and refractory assume 25% non-compliance 	Expert advice

Figure 16 – Treatment assumptions

Assumption	Evidence
15. Currently, in 30% of cases where depression is recognised, GPs practice watchful waiting	Expert advice
16. With the guidelines, in 80% of cases where depression is recognised, GPs will recommend they return for watchful waiting	Expert advice
17. Of those recommended for watchful waiting, 20% don't return for the appointment	Expert advice
18. Of those who return for their second appointment, 15% will have recovered and need no further intervention.	Expert advice
19. Of those who do not recover after watchful waiting, 60% will be offered guided self-help and 30% will be offered funded exercise. The other 10% will be offered antidepressants and bypass the 'general measures' interventions.	Expert advice

<p>20. 50% of patients undergoing exercise or guided self-help will recover or not complete the treatment and will have no further intervention. There is an attrition rate of 30% from exercise and self-help after 3 and 1 sessions respectively.</p>	<p>Expert advice</p>
<p>21. All patients with mild depression who don't recover from general measures are offered brief psychological interventions. Of these 20% will complete the course and require no further intervention, 30% will quit the course after an average of 2 sessions, and the other 50% will not recover.</p>	<p>Expert advice</p>
<p>22. Of the patients who haven't recovered, 80% will then take antidepressants.</p>	<p>Expert advice</p>
<p>23. The managed care by telephone will be provided for all patients on antidepressants and it is assumed this will improve compliance with the treatment. They will be called on average once every 2 months</p>	<p>Expert advice</p>
<p>24. With the guidelines, the percentage increase in patients with recurrent depression taking antidepressants for the full 2 years is 25%. We assume these patients are currently taking them for 1 year.</p>	<p>Expert advice</p>
<p>25. The percentage of patients with chronic depression who are on antidepressants without psychological interventions is 85%. In future these will also receive psychological interventions.</p>	<p>Expert advice</p>
<p>26. The percentage of patients with refractory depression who are currently getting psychological interventions is 10% In future all will receive psychological interventions.</p>	<p>Expert advice</p>

Figure 17 – Delivery of treatment and cost assumptions

Assumption	Evidence
27. The cost of a GP appointment is equivalent to £17	Expert advice
28. The cost per session of funded exercise is £8.00	This is the average cost taken from Barnet PCT who are running exercise programs for CHD.
29. PCTs currently fund only 5% of the future required level of provision of funded exercise.	Expert advice
30. A self-help course comprises of three 20-minute sessions	Expert advice
31. A course of brief psychological intervention comprises of an initial 1-hour session, followed up by 5–7 45-minute sessions	Expert advice
32. A full CBT course comprises of 16–20 1-hour sessions	NICE Guidelines
33. Telephone case-management and guided self-help can be provided by the new graduate workers.	Expert advice
34. Brief psychological interventions can be provided by counsellors	Expert advice
35. Full CBT courses will be provided by fully trained nurses or clinical psychologists.	Expert advice
36. Graduate workers will have a salary of £17,000 on average. They will be supervised by a clinical psychologist for on average 1 hour per week (as well as by a senior GP). They will spend on average 20 hours per week with patients. This equates to 5 hours per day for 4 days a week as they have 1 day off for training per week. They work for 45 weeks of the year. An additional cost of 15%	Expert advice

accounts of the add-on costs of employing them (recruitment, national insurance etc.)	
37. The unit cost of producing a self-help booklet is £2	Expert advice
The net costs for counsellors and trained nurses are calculated in the same way as for graduate workers above except that their salary are £25,000 for counsellors and £27,000 for nurses.	Expert advice
38. The current average unit cost of antidepressants is £13.62 per prescription.	DH prescription data with PPA latest drug costs
39. In future, the percentage of prescriptions for venlafaxine will go down from 8% to 0.5%. TCAs will go down by 2% (absolute) per year, and both will be replaced by SSRIs. This changes the average unit cost to £11.62 per prescription.	Expert advice

Figure 18 – Implicit assumptions in Identifying main Financial impacts

Assumption	Evidence
40. The provision of couple-focused counselling will not change significantly with introduction of these guidelines.	Expert advice
41. Screening will not incur a direct cost because it will be opportunistic. It is expected to increase the number of patients treated for depression, but we have not calculated this due to massive uncertainty as to the impact of this.	Expert advice