NHS
National Institute for
Health and Clinical Excellence

Alcohol-use disorders: alcohol dependence

Costing report

Implementing NICE guidance

February 2011

NICE clinical guideline 115

This costing report accompanies the clinical guideline: 'Alcohol-use disorders: diagnosis, assessment and management of harmful drinking and alcohol dependence' (available online at www.nice.org.uk/guidance/CG115).

Issue date: February 2011

This guidance is written in the following context

This report represents the view of the Institute, which was arrived at after careful consideration of the available data and through consulting healthcare professionals. It should be read in conjunction with the NICE guideline. The report and templates are implementation tools and focus on those areas that were considered to have significant impact on resource utilisation.

The cost and activity assessments in the reports are estimates based on a number of assumptions. They provide an indication of the likely impact of the principal recommendations and are not absolute figures. Assumptions used in the report are based on assessment of the national average. Local practice may be different from this, and the template can be amended to reflect local practice to estimate local impact.

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Executive summary

This costing report looks at the resource impact of implementing the NICE guideline 'Alcohol-use disorders: diagnosis, assessment and management of harmful drinking and alcohol dependence' in England.

The costing method adopted is outlined in appendix A; it uses the most accurate data available, was produced in conjunction with key clinicians, and reviewed by clinical and financial professionals.

Supporting implementation

The NICE clinical guideline on Alcohol-use disorders: alcohol dependence is supported by a range of implementation tools available on our website www.nice.org.uk/guidance/CG115 and detailed in the main body of this report.

Significant resource-impact recommendations

Because of the breadth and complexity of the guideline, this report focuses on recommendations that are considered to have the greatest resource impact and therefore require the most additional resources to implement or can potentially generate savings. They are:

- For harmful drinkers and people with mild alcohol dependence, offer a psychological intervention focused specifically on alcohol-related cognitions, behaviour, problems and social networks. [1.3.3.1]
- For people with mild to moderate dependence and complex needs[1], or severe dependence, offer an intensive community programme following assisted withdrawal in which the service user may attend a day programme lasting between 4 and 7 days per week over a 3-week period. [1.3.4.2]
- After successful withdrawal for people with moderate and severe alcohol dependence, consider offering acamprosate or oral naltrexone[2] in combination with an individual psychological intervention focused specifically on alcohol misuse. [1.3.6.1]

[1] For example, psychiatric comorbidity, poor social support or homelessness.
[2] At the time of publication (February 2011), naltrexone did not have UK marketing authorisation for this indication. Informed consent should be obtained and documented.

Total cost impact

The annual changes in revenue costs arising from fully implementing the guideline are summarised in the table below.

Estimated annual costs and savings of implementation

Recommendation	**Cost (£000s)**
Offering psychological interventions to harmful drinkers and people with mild alcohol dependence – increased cost of psychological interventions	6,748
Offering psychological interventions to harmful drinkers and people with mild alcohol dependence – potential savings due to reduced number of people with alcohol dependence	-5,459
For people with mild to moderate dependence and complex needs, or severe dependence, offer an intensive community programme following assisted withdrawal – potential savings due to reduced cost of residential rehabilitation	-15,242
For people with mild to moderate dependence and complex needs, or severe dependence, offer an intensive community programme following assisted withdrawal – increased cost of intensive community programmes	2,996
Offering acamprosate or oral naltrexone in combination with an individual psychological intervention after a successful withdrawal for people with moderate and severe alcohol dependence – cost of pharmacological intervention and monitoring	2,408
Offering acamprosate or oral naltrexone in combination with an individual psychological intervention after a successful withdrawal for people with moderate and severe alcohol dependence – potential savings due to a reduced number of people who relapse	-747
Net cost	**-9,296**

The current proportion of people with mild alcohol dependence provided with evidence-based specialist treatment is estimated at 1.13%. The current proportion of people with moderate or severe alcohol dependence provided with evidence-based specialist treatment is estimated at 33.69%. The cost impact details in the above table are based on future provision at the same proportions so that the total cost impact is the result of implementing the recommendations in the guideline.

The Guideline Development Group (GDG) considered that implementation of the guidance alongside the two other pieces of NICE guidance addressing alcohol-related problems (‘Alcohol-use disorders: preventing the development

of hazardous and harmful drinking' [NICE public health guidance 24] and 'Alcohol-use disorders: diagnosis and clinical management of alcohol-related physical complications' [NICE clinical guideline 100]) may increase the proportion of harmful drinkers and people with alcohol dependence provided with evidence-based specialist treatment. Estimating the size of this increase is very difficult.

Increasing the number of people provided with evidence-based specialist treatment will increase the total costs of treatment. Conversely, reducing the number of harmful drinkers and people with alcohol dependence is likely to generate significant savings associated with reducing the number of adverse events as a result of harmful drinking.

The annual cost of alcohol-related harm to the NHS in England is estimated to be £2.7 billion (Department of Health 2008). Harmful and dependent drinkers are much more likely to frequently attend the accident and emergency department (A&E), on average 5 times per year. Hospital admissions attributable to alcohol-use disorders were estimated at 1,057,000 in 2009/10 (The Information Centre for Health and Social Care, 2011). Of these admissions, 265,000 were considered wholly attributable to alcohol and 792,000 are partially attributable. It was not possible to quantify the increased costs or savings associated with increasing the proportion of people provided with evidence-based specialist treatment, but investing in cost-effective interventions will probably generate sufficient savings to outweigh the additional costs of increasing the number of people that access services.

Benefits and savings

Implementing the clinical guideline will bring the following benefits:

- Increasing the number of harmful drinkers and people with mild alcohol dependence who access psychological interventions and corresponding decreases in the number of harmful drinkers becoming dependent on alcohol and people with mild dependence developing moderate or severe

dependence. The annual cost to the NHS of alcohol dependence per person is estimated at around £1800.

- Increasing the number of service users who appropriately access intensive community programmes following assisted withdrawal and associated cost savings. Intensive community programmes cost an estimated £7800 less per person than residential rehabilitation programmes.
- Increasing the number of moderately or severely dependent drinkers who successfully withdraw receiving a pharmacological intervention (post withdrawal) to prevent relapse. A corresponding reduction in the number of people who relapse to alcohol dependence, and associated savings of around £747,000 nationally from reduced hospital visits (inpatient, outpatient, A&E attendances), primary care consultations and prescribed medications.
- Increasing the number of harmful drinkers and people with alcohol dependence who receive evidence-based specialist treatment for their dependence. Although increasing the number of people accessing services will increase the overall costs associated with treatment, considerable potential savings could come from the reduced burden of disease for those people. The estimated cost of hospital admissions wholly attributable to alcohol is around £1450 and the indicative cost of admissions partially attributable to alcohol is around £1750.
- A reduction in criminal activity, domestic violence and employee absenteeism associated with harmful alcohol use.

Local costing template

The costing template produced to support this guideline enables organisations in England, Wales and Northern Ireland to estimate the impact locally and replace variables with ones that depict the current local position. A sample calculation using this template showed that savings of around £18,600 could be incurred for a population of 100,000.

1 Introduction

1.1 Supporting implementation

1.1.1 The NICE clinical guideline on Alcohol-use disorders: alcohol dependence is supported by the following implementation tools available on our website www.nice.org.uk/guidance/CG115

- costing tools
  - a national costing report; this document
  - a local costing template; a simple spreadsheet that can be used to estimate the local cost of implementation
- a slide set; key messages for local discussion
- baseline assessment tool; an excel spreadsheet that can be used to help review current practice and plan activity needed to meet recommendations
- clinical audit support to assist organisations to carry out clinical audit
- model dosing regimens for chlordiazepoxide in managing alcohol withdrawal.

1.1.2 A practical guide to implementation, 'How to put NICE guidance into practice: a guide to implementation for organisations', is also available to download from the NICE website. It includes advice on establishing organisational level implementation processes as well as detailed steps for people working to implement different types of guidance on the ground.

1.2 What is the aim of this report?

1.2.1 This report provides estimates of the national cost impact arising from implementation of guidance on the diagnosis, assessment and management of harmful drinking and alcohol dependence in England. These estimates are based on assumptions made about

current practice and predictions of how current practice might change following implementation.

1.2.2 This report aims to help organisations plan for the financial implications of implementing NICE guidance.

1.2.3 This report does not reproduce the NICE guideline on the diagnosis, assessment and management of harmful drinking and alcohol dependence and should be read in conjunction with it (see www.nice.org.uk/guidance/CG115).

1.2.4 The guideline is one of three pieces of NICE guidance addressing alcohol-related problems and should be read in conjunction with:

- Alcohol-use disorders: preventing the development of hazardous and harmful drinking. NICE public health guidance 24 (2010). Available from www.nice.org.uk/guidance/PH24 – public health guidance on the price, advertising and availability of alcohol, how best to detect alcohol misuse in and outside primary care, and brief interventions to manage it in these settings.

- Alcohol-use disorders: diagnosis and clinical management of alcohol-related physical complications. NICE clinical guideline 100 (2010). Available from www.nice.org.uk/guidance/CG100 – a clinical guideline covering acute unplanned alcohol withdrawal including delirium tremens, alcohol-related liver damage, alcohol-related pancreatitis and management of Wernicke's encephalopathy.

This report does not reproduce the cost impact reports that accompany NICE public health guidance 24 and NICE clinical guideline 100.

1.2.5 The costing template that accompanies this report is designed to help those assessing the resource impact at a local level in England, Wales or Northern Ireland. The costing template may help

inform local action plans demonstrating how implementation of the guideline will be achieved.

1.3 Epidemiology of harmful drinking and alcohol dependence

1.3.1 Harmful drinking is defined as a pattern of alcohol consumption causing health problems directly related to alcohol. This could include psychological problems such as depression, alcohol-related accidents or physical illness such as acute pancreatitis. In the longer term, harmful drinkers may go on to develop high blood pressure, cirrhosis, heart disease and some types of cancer, such as mouth, liver, bowel or breast cancer. Alcohol dependence is characterised by craving, tolerance, a preoccupation with alcohol and continued drinking in spite of harmful consequences (for example, liver disease or depression caused by drinking). Alcohol dependence is also associated with increased criminal activity and domestic violence, and an increased rate of significant mental and physical disorders.

1.3.2 Some 24% of the population in England, including 33% of men and 16% of women, consumes alcohol in a way that is potentially or actually harmful to their health or wellbeing ('Adult psychiatric morbidity in England, 2007: results of a household survey', The Information Centre for Health and Social Care, 2009). There are also significant regional variations in the prevalence of drinking patterns. Harmful drinking in men varied from 5% in the east Midlands to 11% in Yorkshire and Humber, and in women from 2% in the east of England to 7% in Yorkshire and Humber.

1.3.3 There is a lack of reliable data on the prevalence of alcohol dependence because the UK general population surveys do not include questionnaires that provide an ICD-10 diagnosis of alcohol dependence. The most reliable estimate comes from the report 'Adult psychiatric morbidity in England, 2007: results of a

household survey'. The prevalence of people with a score of 16 or more on the Alcohol Use Disorders Identification Test (AUDIT) in people aged 16 years and over is estimated at 3.8%, equivalent to around 1.6 million people in England. This prevalence is significantly higher than previous estimates from the adult psychiatric morbidity survey of 2000, which estimated that there were 1.1 million people aged 16–64 dependent on alcohol.

1.3.4 The 2007 adult psychiatric morbidity survey also estimated that the proportion of people with mild, moderate and severe alcohol dependence are around 84%, 14% and 2% respectively. People with mild dependence are classed as those scoring 15 or less on the Severity of Alcohol Dependence Questionnaire (SADQ), those with moderate dependence have a SADQ score of between 15 and 30, and those people who are severely alcohol dependent have a SADQ score of more than 30. The proportion with mild dependence will also include some people who are classed as harmful drinkers.

Applying these proportions to the total number of dependent drinkers 16 years and above gives an estimate of around 1.3 million people with mild alcohol dependence, around 221,000 people with moderate dependence, and around 32,000 people with severe dependence. These figures are summarised in table 1.

Table 1 Estimated number of people aged 16 years and over in England with alcohol dependence

Level of dependence	Prevalence in people aged 16 years and over (%)	Number of people
Mild	3.192	1,325,800
Moderate	0.532	221,000
Severe	0.076	31,600
Total	**3.800**	**1,578,400**

1.3.5 According to 'Substance misuse among young people, the data for 2008–09' (The National Treatment Agency for Substance Misuse)

the prevalence of alcohol dependence in people aged 10–15 is around 0.11%, equivalent to around 4,100 people in England. Although this is a relatively small number in terms of potential cost impact to the NHS, the impact of alcohol dependence on young people and their families should not be underestimated.

1.4 Models of care

1.4.1 The National Alcohol Treatment Monitoring System (NATMS) for 1 April 2008 to 31 March 2009 (Department of Health, 2010) received data from over 1,000 services that treated 10 or more individuals for their alcohol problems. Many alcohol services are provided by the non-statutory sector but are typically funded by the NHS or local authorities.

1.4.2 Services for assisted alcohol withdrawal vary considerably in intensity and there is a lack of structured intensive community-based assisted withdrawal programmes (full guideline). Similarly, access to psychological interventions such as cognitive behavioural therapies specifically focused on alcohol misuse is limited. Despite the publication of 'Models of care for alcohol misusers' by the Department of Health in 2007 (National Treatment Agency for Substance Misuse 2007), alcohol service structures are poorly developed, with care pathways often ill-defined.

2 Costing methodology

2.1 Process

2.1.1 We use a structured approach for costing clinical guidelines (see appendix A).

2.1.2 Little information has been systematically collected about the diagnosis, assessment and management of harmful drinking and alcohol dependence, and this led to problems in building a comprehensive bottom-up model for costing (a costing

methodology in which the unit cost of individual elements and number of units are estimated and added together to provide a total cost). To overcome this limitation, we had to make assumptions in the costing model. We developed these assumptions and tested them for reasonableness with members of the Guideline Development Group (GDG) and key clinical practitioners in the NHS.

2.2 Scope of the cost-impact analysis

2.2.1 The guideline offers best practice advice on the diagnosis, assessment and management of harmful drinking and alcohol dependence in adults and in young people aged 10–17 years.

2.2.2 The guidance does not cover children younger than 10 years or pregnant women. Therefore, these issues are outside the scope of the costing work.

2.2.3 Due to the breadth and complexity of the guideline, we worked with the GDG and other professionals to identify the recommendations that would have the most significant resource-impact (see table 2). Costing work has focused on these recommendations.

Table 2: Recommendations with a significant resource impact

High-cost recommendations	Recommendation number	Key priority?
For harmful drinkers and people with mild alcohol dependence, offer a psychological intervention (such as cognitive behavioural therapies, behavioural therapies or social network and environment-based therapies) focused specifically on alcohol-related cognitions, behaviour, problems and social networks	1.3.3.1	✓
Service users who need assisted withdrawal should usually be offered a community-based programme, which should vary in intensity according to the severity of the dependence, available social support and the presence of comorbidities. • For people with mild to moderate dependence, offer an outpatient-based withdrawal programme in which contact between staff and the service user averages 2–4 meetings per week over a 3-week period. • For people with mild to moderate dependence and complex needs[3], or severe dependence, offer an intensive community programme following assisted withdrawal in which the service user may attend a day programme lasting between 4 and 7 days per week over a 3-week period.	1.3.4.2	
After a successful withdrawal for people with moderate and severe alcohol dependence, consider offering acamprosate or oral naltrexone[a] in combination with an individual psychological intervention (cognitive behavioural therapies, behavioural therapies or social network and environment-based therapies) focused specifically on alcohol misuse	1.3.6.1	✓
[a] At the time of publication (February 2010), naltrexone did not have UK marketing authorisation for this indication. Informed consent should be obtained and documented.		

[3] For example, psychiatric comorbidity, poor social support or homelessness.

2.2.4 Nine of the recommendations in the guideline were identified as key priorities for implementation, and two of these are also among the three recommendations considered to have significant resource impact.

2.2.5 Some training costs may be associated with recommendation 1.2.2.1 regarding the competence of staff working in alcohol services, but these are not likely to be significant at a national level. Similarly, although some additional time may be associated with carrying out a comprehensive assessment for all adults referred to specialist services who score more than 15 on the Alcohol Use Disorders Identification Test (AUDIT; recommendation 1.2.2.6) if this is not current practice, this is unlikely to be significant at a national level.

2.2.6 Recommendations 1.3.1.3 and 1.3.1.5 relating to the general principles for all interventions, and recommendation 1.3.4.1 about assessment for assisted alcohol withdrawal, are designed to reinforce good practice and are not expected to lead to significant changes in current practice or costs.

2.2.7 Recommendation 1.3.7.8 which gives guidance on assessment and interventions for children and young people who misuse alcohol may lead to a change in current practice. However, the relatively small number of children estimated to need the interventions recommended means that the national cost impact is unlikely to be significant.

2.2.8 Recommendation 1.3.8.1, which gives guidance on managing conditions comorbid with alcohol dependence such as depression or anxiety disorders, may lead to a small reduction in the number of people who initially receive treatment for these conditions. Treating the alcohol misuse first may lead to significant improvement in the depression and anxiety. However, assessing the current baseline across different degrees of alcohol misuse and comorbid conditions

is not possible. Any cost impact will depend on local protocols and should, therefore, be assessed locally. A forthcoming piece of NICE guidance: 'Psychosis with coexisting substance misuse' NICE clinical guideline (publication expected March 2011) will give recommendations on the management of people diagnosed with psychosis with coexisting substance misuse.

2.2.9 We have limited the consideration of costs and savings to direct costs to the NHS that will arise from implementation. We did not include consequences for the individual, the private sector or the not-for-profit sector. If applicable, any realisable cost savings arising from a change in practice were offset against the cost of implementing the change.

2.3 General assumptions made

2.3.1 The model is based on annual prevalence of alcohol dependence and population estimates for England (see table 1).

2.3.2 The national cost impact of implementing the significant resource impact recommendations was calculated on the basis of current access to evidence-based specialist treatment for people with alcohol dependence. Statistics from the NATMS 2008/09 reported that 100,098 service users who cited alcohol as their primary problematic substance were in contact with structured treatment. This is equivalent to around 6.34% of people with alcohol dependence.

2.3.3 The Alcohol Needs Assessment Research Project (ANARP): The 2004 National Alcohol Needs Assessment for England (Drummond et al., 2005) estimated that of the people with alcohol dependence provided with evidence-based specialist treatment, around 15% have mild dependence and the remaining 85% have either moderate or severe dependence. This is equivalent to around 1.13% of people with mild dependence and 33.69% of people with

moderate or severe dependence receiving evidence-based treatment each year.

2.4 Basis of unit costs

2.4.1 The way the NHS is funded has undergone reform with the introduction of 'Payment by results', based on a national tariff. The national tariff will be applied to all activity for which Healthcare Resource Groups or other appropriate case-mix measures are available. If a national tariff price or indicative price exists for an activity, this was used as the unit cost; this was then inflated by the national average market forces factor.

2.4.2 Using these prices ensures that the costs in the report are the cost to the primary care trust (PCT) of commissioning predicted changes in activity at the tariff price, but may not represent the actual cost to individual trusts of delivering the activity.

2.4.3 For new or developing services, if no national average unit cost exists, organisations already undertaking this activity were asked their current unit cost.

2.4.4 Some of the unit costs used in this costing report and template were taken from the health economic evidence contained in the full NICE guideline: 'Alcohol-use disorders: diagnosis, assessment and management of harmful drinking and alcohol dependence'. These costs were generally taken from national tariff or reference cost data. If this is not the case, alternative cost sources are referenced.

3 Cost of significant resource-impact recommendations

3.1 Offering a psychological intervention for harmful drinkers and people with mild alcohol dependence

Recommendation

3.1.1 For harmful drinkers and people with mild alcohol dependence, offer a psychological intervention (such as cognitive behavioural therapies, behavioural therapies or social network and environment-based therapies) focused specifically on alcohol-related cognitions, behaviour, problems and social networks. [1.3.3.1]

Background

3.1.2 Psychological interventions such as cognitive behavioural therapies, behavioural therapies or social network and environment-based therapies, focused specifically on alcohol-related cognitions, behaviour, problems and social networks may prevent harmful drinkers becoming dependent on alcohol, and prevent those with mild dependence developing more severe dependence.

3.1.3 Access to psychological interventions such as cognitive behavioural therapies specifically focused on alcohol misuse is currently limited. The proportion of harmful drinkers and people with mild alcohol dependence who currently access specialist services who receive psychological interventions is estimated to be 39.4% (NATMS 2008/09).

Assumptions made

3.1.4 It is assumed that 1.13% of people with mild dependence are receiving evidence-based treatment each year, of whom around 39% (5916) currently receive psychological interventions.

3.1.5 The expert clinical opinion of the GDG was that following implementation of the guideline, around 100% of people (15,015) having treatment for mild dependence may receive psychological interventions.

3.1.6 The average cost of psychological interventions received by people with mild alcohol dependence (£741.67) is taken from the full NICE guidance and is the mean cost of the three main types of therapy recommended: cognitive behavioural therapies, behavioural therapies or social network and environment-based therapies. Costs are based on staff time and an average number of sessions for each type of therapy. The GDG advised that, in practice, the duration of these therapies may be shorter than recommended in the guidance and, therefore, the cost impact of implementing the guidance may be lower than calculated here.

3.1.7 Three people with mild alcohol dependence were assumed to need to receive a psychological intervention to produce one non-drinker (the number needed to treat [NNT]). This is derived from Alwyn et al. (2004), which considered the cost-effectiveness of adding a psychological intervention to a conventional home detoxification programme for problem drinkers and found a NNT of around 3.

3.1.8 The annual unit cost of the saving from the reduction in the number of people dependent on alcohol (£1800 per year per dependent drinker) is taken from the full guideline and is the estimated annual cost to the NHS of alcohol dependency.

Cost summary

3.1.9 The estimated cost associated with offering a psychological intervention to harmful drinkers and people with mild alcohol dependence is around £1.3 million. The details are summarised in table 3.

Table 3: Cost impact of offering a psychological intervention to harmful drinkers and people with mild alcohol dependence

		Current		Proposed		Change	
	Unit cost (£)	**Number of patients**	**Cost (£000s)**	**Number of patients**	**Cost (£000s)**	**Number of patients**	**Cost (£000s)**
Psychological intervention	741.67	5916	4388	15,015	11,136	9099	6748
Potential savings due to reduced number of people with alcohol dependence	−1800	0	0	3033	−5459	3033	−5459
Net cost							**1289**

Other considerations

3.1.10 To calculate the direct cost impact of the guidance, the future proportion of people with mild alcohol dependence receiving evidence-based treatment each year was assumed to be the same as the current proportion (1.13%). The costing template that accompanies this report can be used to increase the future proportion of people receiving treatment (see section 3.4 for further details).

3.2 Offering an intensive community programme following assisted withdrawal

Recommendation

3.2.1 Service users who need assisted withdrawal should usually be offered a community-based programme, which should vary in intensity according to the severity of the dependence, available social support and the presence of comorbidities. For people with mild to moderate dependence, offer an outpatient-based withdrawal programme in which contact between staff and the service user averages 2–4 meetings per week over a 3-week period. For people with mild to moderate dependence and complex needs[4], or severe

[4] For example, psychiatric comorbidity, poor social support or homelessness.

dependence, offer an intensive community programme following assisted withdrawal in which the service user may attend a day programme lasting between 4 and 7 days per week over a 3-week period (recommendation 1.3.4.2).

Background

3.2.2 For people with mild to moderate dependence and complex needs[5], or severe dependence, rehabilitation following withdrawal may take place in various settings. Evidence suggests that community settings are at least as effective as residential units (full guideline) although the GDG considered that a small number of people who are alcohol dependent may benefit from residential treatment after assisted withdrawal and identified the homeless as such a group (see also recommendation 1.3.1.4).

3.2.3 Data from the NATMS 2008/09 indicate that of the estimated 85,083 people with moderate or severe dependence currently receiving specialist treatment each year, 4.64% (3950) currently receive residential rehabilitation after withdrawal. NATMS 2008/09 also indicates that 2.80% (2378) have an accommodation status classed as 'urgent problem' (no fixed abode).

Assumptions made

3.2.4 It has been assumed that those people classed in NATMS as having no fixed abode are homeless, and should receive residential rehabilitation following assisted withdrawal (2378 people). It is assumed that the remaining people (1572) who previously received residential rehabilitation following assisted withdrawal will now receive an intensive community programme.

3.2.5 Unit costs for residential rehabilitation (£9696) and intensive community programmes (£1960) are taken from the full guideline and are based on reference costs 2008/09 and data from existing

[5] For example, psychiatric comorbidity, poor social support or homelessness.

services. The GDG estimated that residential rehabilitation will typically last around 12 weeks. The unit cost for intensive community programmes assumed attendance at a day programme for 5.5 days per week (recommendation states 4–7 days per week) over a 3-week period.

3.2.6 Following implementation of the guidance, at current levels, the number of people receiving residential rehabilitation following assisted withdrawal is assumed to decrease by 1572 annually while the number of people receiving an intensive community programme annually is expected increase by the same amount (1572).

Cost summary

3.2.7 The estimated cost impact associated with offering intensive community programmes to service users following assisted withdrawal is an annual saving of around £12.2 million. The details are summarised in table 4.

Table 4: Number of people receiving residential rehabilitation and intensive community programmes following assisted withdrawal and the associated cost impact

		Current		Proposed		Change	
	Unit cost (£)	**Number of patients**	**Cost (£000s)**	**Number of patients**	**Cost (£000s)**	**Numbers of patients**	**Cost (£000s)**
Residential rehabilitation	9696	3950	38,299	2378	23,057	−1572	−15,242
Intensive community programmes	1906	0	0	1572	2996	1572	2996
Total			**38,299**		**26,053**		**−12,246**

Other considerations

3.2.8 To calculate the direct cost impact of the guidance, the future proportion of people with moderate or severe alcohol dependence receiving evidence-based treatment each year was assumed to be

the same as the current proportion (33.69%). The costing template that accompanies this report can be used to increase the future proportion of people receiving treatment (see section 3.4 for further details).

3.2.9 Access to intensive community programmes following assisted withdrawal will vary locally, for example, it may be more difficult to access these in more remote rural locations. The cost impact of implementing this recommendation will, therefore, be dependent on local service arrangements.

3.3 Offering acamprosate or oral naltrexone in combination with an individual psychological intervention after a successful withdrawal for people with moderate and severe alcohol dependence

Recommendation

3.3.1 After a successful withdrawal for people with moderate and severe alcohol dependence, consider offering acamprosate or oral naltrexone[6] in combination with an individual psychological intervention (cognitive behavioural therapies, behavioural therapies or social network and environment-based therapies) focused specifically on alcohol misuse [1.3.6.1].

Background

3.3.2 Pharmacotherapy is most frequently used to facilitate withdrawal from alcohol in dependent drinkers; many fewer individuals receive medication such as acamprosate, disulfiram or naltrexone for relapse prevention (full guideline). A US survey revealed that about 9% of people needing treatment for alcohol dependence received

[6] At the time of publication (February 2011), oral naltrexone did not have UK marketing authorisation for this indication. Informed consent should be obtained and documented.

medication for relapse. The level of prescribing is likely to be a similar or even lower in the UK.

3.3.3 The expert clinical opinion of the GDG was that around 5% of people with moderate or severe dependence who successfully withdraw from alcohol dependency currently receive medication for relapse prevention (after withdrawal).

Assumptions made

3.3.4 The proportion of people with moderate or severe alcohol dependence receiving evidence-based specialist treatment per year who successfully withdraw from alcohol was assumed to be 26.24% (NATMS 2008/09) – equivalent to 22,326 people.

3.3.5 Of these, 5% (1,116 people) were assumed to currently receive medication for relapse prevention.

3.3.6 The opinion of the GDG was that following implementation of the guidance around 30% of people (6,698 people) with moderate or severe dependence who successfully withdraw will receive acamprosate or oral naltrexone for relapse prevention.

3.3.7 The additional cost of relapse prevention with a pharmacological intervention (acamprosate or oral naltrexone), along with the additional monitoring needed when these drugs are prescribed (£431.33), was taken from the full guideline. Drug costs were taken from the 'British national formulary' (BNF) 60, September 2010. People were assumed to be already receiving a psychological intervention after withdrawal and the incremental cost is the cost of the additional medication and monitoring only.

3.3.8 Rates of relapse for people who receive medication after withdrawal (82.15%) and those who do not receive medication after withdrawal (89.56%) were taken from the full guideline. Increasing the number of people who receive medication following a

successful withdrawal leads to an expected reduction in the number of people having a relapse from 19,913 before implementation, to 19,498 after implementation of the guidance.

3.3.9 The annual cost of a relapse (£1800) was taken from the full guideline and is the estimated annual cost to the NHS of alcohol dependency.

Cost summary

3.3.10 The estimated cost associated with offering acamprosate or oral naltrexone in combination with an individual psychological intervention after a successful withdrawal for people with moderate and severe alcohol dependence is around £1.7 million. The details are summarised in table 5.

Table 5: Number of people receiving acamprosate or oral naltrexone and number relapsing after a successful withdrawal and associated cost impact

		Current		Proposed		Change	
	Unit cost (£)	**Number of patients**	**Cost (£000s)**	**Number of patients**	**Cost (£000s)**	**Number of patients**	**Cost (£000s)**
Pharmacological intervention and monitoring	431.33	1116	481	6698	2889	5582	2408
Relapse	1800.00	19,913	35,843	19,498	35,096	−415	−747
Total			**36,324**		**37,985**		**1661**

Other considerations

3.3.11 To calculate the direct cost impact of the guidance, the future proportion of people with moderate or severe alcohol dependence receiving evidence-based treatment each year was assumed to be the same as the current proportion (33.69%). The costing template that accompanies this report can be used to increase the future proportion of people receiving treatment (see section 3.4 for further details).

3.4 Benefits and savings

3.4.1 The annual cost of alcohol-related harm to the NHS in England is estimated to be £2.7 billion (Department of Health 2008). Harmful and dependent drinkers are much more likely to be frequent A&E attendees, attending on average 5 times per annum. In addition to A&E attendances, primary care consultations and prescribed medications, harmful drinking and alcohol dependence leads to physical illness such as acute pancreatitis. In the longer term harmful drinkers may develop high blood pressure, cirrhosis, heart disease and some types of cancer. Hospital admissions attributable to alcohol-use disorders have been estimated at 1,057,000 in 2009/10 (The NHS Information Centre 2011). Of these admissions, 265,000 were considered wholly attributable to alcohol and 792,000 were partially attributable.

3.4.2 The estimated indicative cost of hospital admissions wholly attributable to alcohol is around £1450 while the indicative cost of admissions partially attributable to alcohol is around £1750 (Department of Health, 2011). It was not possible to quantify the increased costs or savings associated with increasing the proportion of people provided with evidence-based specialist treatment, but investing in cost-effective interventions will probably generate sufficient savings to outweigh the additional costs of increasing the number of people that access services.

The National Audit Office (NAO) report ‘Reducing Alcohol Harm: health services in England for alcohol misuse (National Audit Office, 2008) concluded that there was good evidence to show that interventions for alcohol misuse are effective, reducing the alcohol consumption of a proportion of patients and mitigating the damage to their health. It also concluded that many such interventions have been shown to be cost-effective i.e. the costs of providing them are outweighed – in some cases many times over – by reducing the

'full social cost' associated with alcohol consumption. This full social cost includes, for example, expenditure by the criminal justice system due to alcohol-related crime and disorder.

The 'Alcohol Ready Reckoner' produced by the Department of Health analytical team (http://www.alcohollearningcentre.org.uk/Topics/Browse/Data/Datatools/?parent=5113&child=5109) allows users to look at a range of interventions related to preventing alcohol misuse and estimates a return on investment of over £1.80 for every £1 invested in alcohol treatment.

3.4.3 Increasing the number of harmful drinkers and people with mild alcohol dependence who access psychological interventions is expected to lead to a corresponding decrease in the number of people who go on to develop moderate or severe dependence. The annual cost to the NHS of alcohol dependence per person was estimated at around £1,800.

3.4.4 Increasing the number of service users who appropriately access intensive community programmes following assisted withdrawal is likely to generate cost savings without any reduction in the quality of outcomes for people receiving assisted withdrawal. Intensive community programmes cost an estimated £7800 less than residential rehabilitation programmes.

3.4.5 Increasing the number of moderately or severely dependent drinkers who successfully withdraw receiving a pharmacological intervention (post withdrawal) to prevent relapse should lead to a corresponding reduction in the number of people who relapse to alcohol dependence, and associated savings from reduced hospital visits (inpatient, outpatient, A&E attendances), primary care consultations and prescribed medications.

3.4.6 Where savings resulting from reduced numbers of people with alcohol dependence (£1800 per person per year) have been calculated, the savings are assumed to apply in the same year the intervention is received. Savings may also be realised in subsequent years although it is not possible to accurately model this effect because of the high rates of relapse associated with withdrawal from alcohol dependence.

3.4.7 Harmful alcohol use is also associated with increased criminal activity and domestic violence and employee absenteeism. Implementing the guidance is expected to reduce the significant costs to society as a result of these factors.

3.4.8 It was the opinion of the GDG that 'frequent fliers' (people who regularly attend A&E because of problems associated with alcohol dependency) may be identified by exploring A&E attendance figures and targeted for assertive case management. This may lead to additional costs being incurred but is also likely to lead to increased savings as a result of actively managing these people and preventing the number adverse events associated with alcohol dependency increasing.

4 Sensitivity analysis

4.1 Methodology

4.1.1 There are a number of assumptions in the model for which no empirical evidence exists. Because of the limited data, the model developed is based mainly on discussions of typical values and predictions of how things might change as a result of implementing the guidance and is therefore subject to a degree of uncertainty.

4.1.2 As part of discussions with practitioners, we discussed possible minimum and maximum values of variables, and calculated their impact on costs across this range.

4.1.3 Wherever possible we have used the national tariff plus market forces factor to determine cost. We used the variation of costs for the 25th and 75th percentiles from reference costs compared with the reference cost national average as a guide to inform the maximum and minimum range of costs.

4.1.4 It is not possible to arrive at an overall range for total cost because the minimum or maximum of individual lines would not occur simultaneously. We undertook one-way simple sensitivity analysis, altering each variable independently to identify those that have greatest impact on the calculated total cost.

4.1.5 Appendix B contains a table detailing all variables modified and the key conclusions drawn are discussed below.

4.2 Impact of sensitivity analysis on costs

Proportion of dependent population with moderate alcohol dependence

4.2.1 Varying the proportion of the dependent population with moderate alcohol dependence between 12% and 16% results in a difference in the savings generated of £2.6 million, from £8.0 million to £10.6 million.

Mean cost of psychological interventions

4.2.2 Varying the mean cost of psychological interventions offered to harmful drinkers and people with mild alcohol dependence has a significant effect on the national cost impact of the guidance. Varying the mean cost from £600 to £900 leads to a difference in the savings generated of £2.7 million, from £10.6 million to £7.9 million.

Offering an intensive community programme following assisted withdrawal

4.2.3 Varying several assumptions related to offering intensive community programmes following assisted withdrawal for people with mild to moderate dependence and complex needs, or severe dependence, have a significant effect on the national cost impact of implementing the guidance. This is due to the relatively high cost assumed for residential rehabilitation (£9696). Varying the current proportion of people receiving residential rehabilitation following assisted withdrawal between 4.39% and 4.89% of those receiving evidence-based specialist treatment each year alters the savings generated by £3.3 million (£7.6 million to £10.9 million).

Varying the future proportion of people receiving residential rehabilitation following assisted withdrawal between 2.55% and 3.05% of those receiving evidence-based specialist treatment each year also alters the savings generated by £3.3 million (£10.9 million to £7.6 million). The unit cost of residential rehabilitation is also influential. Varying the cost between £8888 and £10,504 leads to a change in the savings generated of £2.5 million, from £8.0 million to £10.5 million.

5 Impact of guidance for commissioners

5.1.1 The guideline is likely to have an impact for commissioners. Implementing the recommendations in the guideline may lead to an increase in the number of people accessing specialist alcohol services and an associated cost impact. Costs associated with treating the number of people who currently access services may also increase. Conversely, a reduction in the number of adverse events associated with alcohol misuse are likely, such as less regular attendance at A&E and fewer comorbid mental disorders and physical comorbidities including gastrointestinal disorders (in particular liver disease) and neurological and cardiovascular

disease. Admissions associated with these adverse events may, therefore, fall.

5.1.2 Costs associated with managing Alcohol-use disorders: alcohol dependence are likely to fall under programme budgeting category 205A (mental health disorders – substance abuse).

6 Conclusion

6.1 Total national cost for England

6.1.1 Using the significant resource-impact recommendations shown in table 2 and assumptions specified in section 3 we estimated the annual cost impact of fully implementing the guideline in England to be a saving of around £9.3 million. Table 6 shows the breakdown of cost of each significant resource-impact recommendation.

Table 6: Estimated annual costs and savings of implementation

Recommendation	**Cost (£000)**
Offering psychological interventions to harmful drinkers and people with mild alcohol dependence – increased cost of psychological interventions	6,748
Offering psychological interventions to harmful drinkers and people with mild alcohol dependence – potential savings due to reduced number of people with alcohol dependence	-5,459
For people with mild to moderate dependence and complex needs, or severe dependence, offer an intensive community programme following assisted withdrawal – potential savings due to reduced cost of residential rehabilitation	-15,242
For people with mild to moderate dependence and complex needs, or severe dependence, offer an intensive community programme following assisted withdrawal – increased cost of intensive community programmes	2,996
Offering acamprosate or oral naltrexone in combination with an individual psychological intervention after a successful withdrawal for people with moderate and severe alcohol dependence – cost of pharmacological intervention and monitoring	2,408
Offering acamprosate or oral naltrexone in combination with an individual psychological intervention after a successful withdrawal for people with moderate and severe alcohol dependence – potential savings due to a reduced number of people who relapse	-747
Net cost	**-9,296**

6.1.2 We applied reality tests against existing data wherever possible, but this was limited by the availability of detailed data. We consider this assessment to be reasonable, given the limited detailed data regarding diagnosis and treatment paths and the time available. However, the costs presented are estimates and should not be taken as the full cost of implementing the guideline.

6.1.3 The GDG considered that implementation of the guidance alongside the two other pieces of NICE guidance addressing alcohol-related problems ('Alcohol-use disorders: preventing the development of hazardous and harmful drinking' [NICE public health guidance 24] and 'Alcohol-use disorders: diagnosis and clinical management of alcohol-related physical complications' [NICE clinical guideline 100]) is likely to increase the proportion of harmful drinkers and people with alcohol dependence provided with evidence-based specialist treatment. Estimating the size of this increase is very difficult.

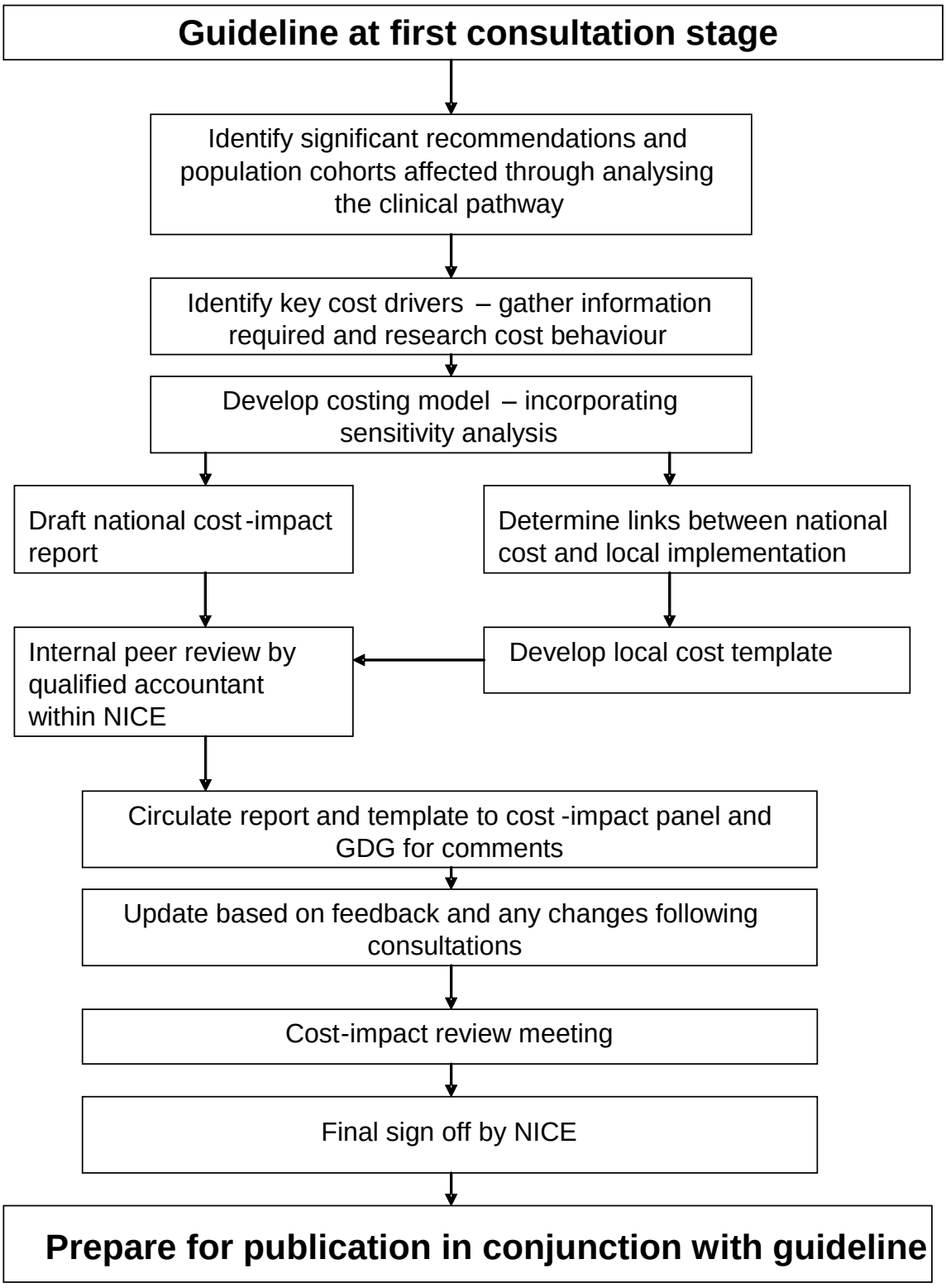
6.1.4 Increasing the number of people provided with evidence-based specialist treatment will increase the costs associated with treating these people. Conversely, reducing the number of harmful drinkers and people with alcohol dependence is likely to generate significant savings associated with reducing the number of adverse events as a result of harmful drinking.

6.1.5 It was not possible to quantify the increased costs or savings associated with increasing the proportion of people provided with evidence-based specialist treatment, but investing in cost-effective interventions will probably generate sufficient savings to outweigh the additional costs of increasing the number of people that access services.

6.2 Next steps

6.2.1 The local costing template produced to support this guideline enables organisations such as PCTs or health boards in Wales and Northern Ireland to estimate the impact locally and replace variables with ones that depict the current local position. A sample calculation using this template showed that a population of 100,000 could expect to save around £18,600. Use this template to calculate the cost of implementing this guidance in your area.

Appendix A. Approach to costing guidelines



Appendix B. Results of sensitivity analysis

Assessment of sensitivity costs to a range of variables								
Parameter varied	Baseline value	Minimum value	Maximum value	Baseline costs (£000s)	Minimum costs (£000s)	Maximum costs (£000s)	Change (£000s)
Prevalence of alcohol dependence in population aged 16 years and over	3.80%	3.50%	4.10%	-9,296	-8,571	-10,026	-1,455
Proportion of dependent population aged 16 years and over with mild dependence	84.00%	79.00%	89.00%	-9,296	-9,372	-9,220	152
Proportion of dependent population aged 16 years and over with moderate dependence	14.00%	12.00%	16.00%	-9,296	-7,975	-10,620	-2,645
Proportion of dependent population aged 16 years and over with severe dependence	2.00%	1.50%	2.50%	-9,296	-8,965	-9,632	-667
Proportion of people with mild alcohol dependence provided with evidence-based specialist treatment each year	1.13%	0.88%	1.38%	-9,296	-9,584	-9,015	569
Proportion of people with moderate or severe alcohol dependence provided with evidence-based specialist treatment each year	33.69%	30.69%	36.69%	-9,296	-8,358	-10,238	-1,880
Current proportion of harmful drinkers and people with mild alcohol dependence provided with evidence-based specialist treatment receiving psychological interventions	39.40%	36.40%	42.40%	-9,296	-9,232	-9,360	-128
Mean cost of psychological interventions (£)	741.67	600.00	900.00	-9,296	-10,585	-7,855	2,730
Future proportion of harmful drinkers and people with mild alcohol dependence provided with evidence-based specialist treatment receiving psychological interventions	100%	90%	100%	-9,296	-9,508	-9,296	212
Number needed to treat (NNT) to produce one extra non-drinker	3.00	2.50	3.50	-9,296	-10,389	-8,517	1,872
Annual cost to NHS of alcohol dependence, per person	1,800	1,500	2,100	-9,296	-8,262	-10,331	-2,069
Current proportion of people receiving residential rehabilitation following assisted withdrawal	4.64%	4.39%	4.89%	-9,296	-7,621	-10,940	-3,319
Cost of residential rehabilitation (£)	9,696	8,888	10,504	-9,296	-8,026	-10,566	-2,540
Future proportion of people receiving residential rehabilitation following assisted withdrawal	2.80%	2.55%	3.05%	-9,296	-10,916	-7,606	3,310
Cost of intensive community programme (£)	1,906	1,386	2,426	-9,296	-10,114	-8,479	1,635
Proportion who successfully withdraw from alcohol dependence each year	26.24%	23.74%	28.74%	-9,296	-9,454	-9,136	318
Current proportion of people who successfully withdraw who receive medication for relapse prevention	5.00%	3.00%	7.00%	-9,296	-9,161	-9,428	-267
Cost of relapse prevention – pharmacological intervention and monitoring (£)	431.33	401.33	461.33	-9,296	-9,464	-9,129	335
Future proportion of people who successfully withdraw who receive medication for relapse prevention	30.00%	25.00%	35.00%	-9,296	-9,625	-8,962	663

Appendix C. References

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