



*National Institute for  
Health and Clinical Excellence*

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# **Alcohol-use disorders**

**Diagnosis and clinical management of  
alcohol-related physical complications**

**NICE clinical guideline 100**

Developed by the National Collaborating Centre for Chronic Conditions  
(now the National Clinical Guideline Centre for Acute and Chronic Conditions)

## **NICE clinical guideline 100**

### **Alcohol-use disorders: diagnosis and clinical management of alcohol-related physical complications**

#### **Ordering information**

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- The full guideline – all the recommendations, details of how they were developed, and reviews of the evidence they were based on.

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NICE clinical guidelines are recommendations about the treatment and care of people with specific diseases and conditions in the NHS in England and Wales.

This guidance represents the view of NICE, which was arrived at after careful consideration of the evidence available. Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. However, the guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer, and informed by the summary of product characteristics of any drugs they are considering.

Implementation of this guidance is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guidance, in their local context, in light of their duties to avoid unlawful discrimination and to have regard to promoting equality of opportunity. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties.

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## Introduction

In the UK, it is estimated that 24% of adults drink in a hazardous or harmful way<sup>1</sup> (for definitions of harmful and hazardous drinking see page 7). Levels of self-reported hazardous and harmful drinking are lowest in the central and eastern regions of England (21–24% of men and 10–14% of women). They are highest in the North East, North West and Yorkshire and Humber (26–28% of men, 16–18% of women)<sup>2</sup>. Hazardous and harmful drinking are commonly encountered among hospital attendees; approximately 20% of patients admitted to hospital for illnesses unrelated to alcohol are drinking at potentially hazardous levels<sup>3</sup>.

Continued hazardous and harmful drinking can result in alcohol dependence. An abrupt reduction in alcohol intake in a person who has been drinking excessively for a prolonged period of time may result in the development of an alcohol withdrawal syndrome. In addition, persistent drinking at hazardous and harmful levels can result in damage to almost every organ or system of the body.

This guideline covers key areas in the investigation and management of the following alcohol-related conditions in adults and young people (aged 10 years and older):

- acute alcohol withdrawal, including seizures and delirium tremens
- Wernicke's encephalopathy
- liver disease
- acute and chronic pancreatitis.

It does not specifically look at women who are pregnant, children younger than 10 years, or people with physical or mental health conditions caused by alcohol use, other than those listed above.

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<sup>1</sup> The NHS Information Centre (2009) Statistics on alcohol: England. Leeds: The Health and Social Care Information Centre

<sup>2</sup> North West Public Health Observatory (2007) Indications of public health in the English Regions 8: alcohol. Liverpool: Association of Public Health Observatories

<sup>3</sup> Royal College of Physicians (2001) Alcohol — can the NHS afford it? Recommendations for a coherent alcohol strategy for hospitals. London: Royal College of Physicians

This is one of three pieces of NICE guidance addressing alcohol-related problems among people aged 10 years and older. The others are:

- ‘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](http://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, assessment and management of harmful drinking and alcohol dependence’ (publication expected February 2011). A clinical guideline covering identification, assessment, pharmacological and psychological/psychosocial interventions, and the prevention and management of neuropsychiatric complications.

The guideline will assume that prescribers will use a drug’s summary of product characteristics to inform decisions made with individual patients. This guideline recommends some drugs for indications for which they do not have a UK marketing authorisation at the date of publication, if there is good evidence to support that use. Where recommendations have been made for the use of drugs outside their licensed indications (‘off-label use’), these drugs are marked with a footnote.

## Patient-centred care

This guideline offers best practice advice on the care of adults and young people with alcohol-related physical complications.

Treatment and care should take into account people's needs and preferences. People with alcohol-related physical complications should have the opportunity to make informed decisions about their care and treatment, in partnership with their healthcare professionals. If patients do not have the capacity to make decisions, healthcare professionals should follow the Department of Health's advice on consent (available from [www.dh.gov.uk/consent](http://www.dh.gov.uk/consent)) and the code of practice that accompanies the Mental Capacity Act (summary available from [www.publicguardian.gov.uk](http://www.publicguardian.gov.uk)). In Wales, healthcare professionals should follow advice on consent from the Welsh Assembly Government (available from [www.wales.nhs.uk/consent](http://www.wales.nhs.uk/consent)).

If the patient is under 16, healthcare professionals should follow the guidelines in 'Seeking consent: working with children' (available from [www.dh.gov.uk/consent](http://www.dh.gov.uk/consent)).

Good communication between healthcare professionals and patients is essential. It should be supported by evidence-based written information tailored to the patient's needs. Treatment and care, and the information patients are given about it, should be culturally appropriate. It should also be accessible to people with additional needs such as physical, sensory or learning disabilities, and to people who do not speak or read English.

If the patient agrees, families and carers should have the opportunity to be involved in decisions about treatment and care. Families and carers should also be given the information and support they need.

Care of young people in transition between paediatric and adult services should be planned and managed according to the best practice guidance described in 'Transition: getting it right for young people' (available from [www.dh.gov.uk](http://www.dh.gov.uk)).

## Terms used in this guideline

The Guideline Development Group used the following definitions in this guideline.

- **Acute alcohol withdrawal** The physical and psychological symptoms that people can experience when they suddenly reduce the amount of alcohol they drink if they have previously been drinking excessively for prolonged periods of time.
- **Alcohol dependence** A cluster of behavioural, cognitive and physiological factors that typically include a strong desire to drink alcohol and difficulties in controlling its use. Someone who is alcohol-dependent may persist in drinking, despite harmful consequences. They will also give alcohol a higher priority than other activities and obligations. For further information, please refer to: 'Diagnostic and statistical manual of mental disorders' (DSM-IV) (American Psychiatric Association 2000) and 'International statistical classification of diseases and related health problems – 10th revision' (ICD-10) (World Health Organization 2007).
- **Alcohol-use disorders** Alcohol-use disorders cover a wide range of mental health problems as recognised within the international disease classification systems (ICD-10, DSM-IV). These include hazardous and harmful drinking and alcohol dependence.
- **Coeliac axis block** Pain relief by nerve block of the coeliac plexus.
- **CIWA–Ar scale** The Clinical Institute Withdrawal Assessment – Alcohol, revised (CIWA–Ar) scale is a validated 10-item assessment tool that can be used to quantify the severity of the alcohol withdrawal syndrome, and to monitor and medicate patients throughout withdrawal.
- **Decompensated liver disease** Liver disease complicated by the development of jaundice, ascites, bruising or abnormal bleeding and/or hepatic encephalopathy.
- **Harmful drinking** A pattern of alcohol consumption that is causing mental or physical damage.

- **Hazardous drinking** A pattern of alcohol consumption that increases someone's risk of harm. Some would limit this definition to the physical or mental health consequences (as in harmful use). Others would include the social consequences. The term is currently used by the World Health Organization to describe this pattern of alcohol consumption. It is not a diagnostic term.
- **Malnourishment** is a state of nutrition in which a deficiency of energy, protein and/or other nutrients causes measurable adverse effects on tissue/body form, composition, function or clinical outcome.
- **Medically assisted alcohol withdrawal** The deliberate withdrawal from alcohol by a dependent drinker under the supervision of medical staff. Prescribed medication may be needed to relieve the symptoms. It can be carried out at home, in the community or in a hospital or other inpatient facility.
- **Splanchnicectomy** Surgical division of the splanchnic nerves and coeliac ganglion.



## Key priorities for implementation

The following recommendations have been identified as priorities for implementation.

### Acute alcohol withdrawal

- For people in acute alcohol withdrawal with, or who are assessed to be at high risk of developing, alcohol withdrawal seizures or delirium tremens, offer admission to hospital for medically assisted alcohol withdrawal.
- Healthcare professionals who care for people in acute alcohol withdrawal should be skilled in the assessment and monitoring of withdrawal symptoms and signs.
- Follow a symptom-triggered regimen<sup>4</sup> for drug treatment for people in acute alcohol withdrawal who are:
  - in hospital **or**
  - in other settings where 24-hour assessment and monitoring are available.

### Alcohol-related liver disease

- Refer patients with decompensated liver disease to be considered for assessment for liver transplantation if they:
  - still have decompensated liver disease after best management and 3 months' abstinence from alcohol **and**
  - are otherwise suitable candidates for liver transplantation<sup>5</sup>.

### Alcohol-related pancreatitis

- Refer people with pain from chronic alcohol-related pancreatitis to a specialist centre for multidisciplinary assessment.

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<sup>4</sup> A symptom-triggered regimen involves treatment tailored to the person's individual needs. These are determined by the severity of withdrawal signs and symptoms. The patient is regularly assessed and monitored, either using clinical experience and questioning alone or with the help of a designated questionnaire such as the CIWA-Ar. Drug treatment is provided if the patient needs it and treatment is withheld if there are no symptoms of withdrawal.

<sup>5</sup> For the nationally agreed guidelines for liver transplant assessment in the context of alcohol-related liver disease, see [www.uktransplant.org.uk/ukt/about\\_transplants/organ\\_allocation/pdf/liver\\_advisory\\_group\\_alcohol\\_guidelines-november\\_2005.pdf](http://www.uktransplant.org.uk/ukt/about_transplants/organ_allocation/pdf/liver_advisory_group_alcohol_guidelines-november_2005.pdf)

# 1 Guidance

The following guidance is based on the best available evidence. The full guideline ([www.nice.org.uk/guidance/CG100/Guidance](http://www.nice.org.uk/guidance/CG100/Guidance)) gives details of the methods and the evidence used to develop the guidance.

## 1.1 *Acute alcohol withdrawal*

### 1.1.1 Admission to hospital

- 1.1.1.1 For people in acute alcohol withdrawal with, or who are assessed to be at high risk of developing, alcohol withdrawal seizures or delirium tremens, offer admission to hospital for medically assisted alcohol withdrawal.
- 1.1.1.2 For young people under 16 years who are in acute alcohol withdrawal, offer admission to hospital for physical and psychosocial assessment, in addition to medically assisted alcohol withdrawal.
- 1.1.1.3 For certain vulnerable people who are in acute alcohol withdrawal (for example, those who are frail, have cognitive impairment or multiple comorbidities, lack social support, have learning difficulties or are 16 or 17 years), consider a lower threshold for admission to hospital for medically assisted alcohol withdrawal.
- 1.1.1.4 For people who are alcohol dependent but not admitted to hospital, offer advice to avoid a sudden reduction in alcohol intake<sup>6</sup> and information about how to contact local alcohol support services.

### 1.1.2 Assessment and monitoring

- 1.1.2.1 Healthcare professionals who care for people in acute alcohol withdrawal should be skilled in the assessment and monitoring of withdrawal symptoms and signs.

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<sup>6</sup> While abstinence is the goal, a sudden reduction in alcohol intake can result in severe withdrawal in dependent drinkers.

1.1.2.2 Follow locally specified protocols to assess and monitor patients in acute alcohol withdrawal. Consider using a tool (such as the Clinical Institute Withdrawal Assessment – Alcohol, revised [CIWA–Ar] scale<sup>7</sup>) as an adjunct to clinical judgement.

1.1.2.3 People in acute alcohol withdrawal should be assessed immediately on admission to hospital by a healthcare professional skilled in the management of alcohol withdrawal.

### 1.1.3 Treatment for acute alcohol withdrawal

1.1.3.1 Offer pharmacotherapy to treat the symptoms of acute alcohol withdrawal as follows:

- Consider offering a benzodiazepine<sup>8</sup> or carbamazepine<sup>9</sup>.
- Clomethiazole<sup>10</sup> may be offered as an alternative to a benzodiazepine or carbamazepine. However, it should be used with caution, in inpatient settings only and according to the summary of product characteristics.

1.1.3.2 People with decompensated liver disease who are being treated for acute alcohol withdrawal should be offered advice from a healthcare professional experienced in the management of patients with liver disease.

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<sup>7</sup> Sullivan JT, Sykora K, Schneiderman J et al. (1989) Assessment of alcohol withdrawal: the revised Clinical Institute Withdrawal Assessment for Alcohol scale (CIWA-Ar). *British Journal of Addiction* 84:1353-1357

<sup>8</sup> Benzodiazepines are used in UK clinical practice in the management of alcohol-related withdrawal symptoms. Diazepam and chlordiazepoxide have UK marketing authorisation for the management of acute alcohol withdrawal symptoms. However, at the time of writing (May 2010), alprazolam, clobazam and lorazepam did not have UK marketing authorisation for this indication. Informed consent should be obtained and documented. In addition, the summary of product characteristics (SPC) for alprazolam advises that benzodiazepines should be used with extreme caution in patients with a history of alcohol abuse. The SPC for clobazam states that it must not be used in patients with any history of alcohol dependence (due to increased risk of dependence). The SPC for lorazepam advises that use in individuals with a history of alcoholism should be avoided (due to increased risk of dependence).

<sup>9</sup> Carbamazepine is used in UK clinical practice in the management of alcohol-related withdrawal symptoms. At the time of writing (May 2010), carbamazepine did not have UK marketing authorisation for this indication. Informed consent should be obtained and documented.

<sup>10</sup> Clomethiazole has UK marketing authorisation for the treatment of alcohol withdrawal symptoms where close hospital supervision is also provided. However, at the time of writing (May 2010), the SPC advises caution in prescribing clomethiazole for individuals known to be addiction-prone and to outpatient alcoholics. It also advises against prescribing it to patients who continue to drink or abuse alcohol. Alcohol combined with clomethiazole, particularly in alcoholics with cirrhosis, can lead to fatal respiratory depression even with short-term use. Clomethiazole should only be used in hospital under close supervision or, in exceptional circumstances, on an outpatient basis by specialist units when the daily dosage must be monitored closely.

- 1.1.3.3 Offer information about how to contact local alcohol support services to people who are being treated for acute alcohol withdrawal.
- 1.1.3.4 Follow a symptom-triggered regimen<sup>11</sup> for drug treatment for people in acute alcohol withdrawal who are:
- in hospital **or**
  - in other settings where 24-hour assessment and monitoring are available.

#### **1.1.4 Management of delirium tremens**

- 1.1.4.1 In people with delirium tremens, offer oral lorazepam<sup>12</sup> as first-line treatment. If symptoms persist or oral medication is declined, give parenteral lorazepam<sup>12</sup>, haloperidol<sup>13</sup> or olanzapine<sup>14</sup>.
- 1.1.4.2 If delirium tremens develops in a person during treatment for acute alcohol withdrawal, review their withdrawal drug regimen.

#### **1.1.5 Management of alcohol withdrawal seizures**

- 1.1.5.1 In people with alcohol withdrawal seizures, consider offering a quick-acting benzodiazepine (such as lorazepam<sup>15</sup>) to reduce the likelihood of further seizures.

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<sup>11</sup> A symptom-triggered regimen involves treatment tailored to the person's individual needs. These are determined by the severity of withdrawal signs and symptoms. The patient is regularly assessed and monitored, either using clinical experience and questioning alone or with the help of a designated questionnaire such as the CIWA–Ar. Drug treatment is provided if the patient needs it and treatment is withheld if there are no symptoms of withdrawal.

<sup>12</sup> Lorazepam is used in UK clinical practice in the management of delirium tremens. At the time of writing (May 2010), lorazepam did not have UK marketing authorisation for this indication. Informed consent should be obtained and documented. In addition, the SPC advises that use in individuals with a history of alcoholism should be avoided (due to increased risk of dependence).

<sup>13</sup> Haloperidol is used in UK clinical practice in the management of delirium tremens. At the time of writing (May 2010), haloperidol did not have UK marketing authorisation for this indication. Informed consent should be obtained and documented. In addition, the SPC advises caution in patients suffering from conditions predisposing to convulsions, such as alcohol withdrawal.

<sup>14</sup> Olanzapine is used in UK clinical practice in the management of delirium tremens. At the time of writing (May 2010), olanzapine did not have UK marketing authorisation for this indication. Informed consent should be obtained and documented. In addition, the SPC advises that the safety and efficacy of intramuscular olanzapine has not been evaluated in patients with alcohol intoxication.

<sup>15</sup> Lorazepam is used in UK clinical practice in the management of alcohol withdrawal seizures. At the time of writing (May 2010), lorazepam did not have UK marketing authorisation for this indication. Informed consent should be obtained and documented. In addition, the SPC advises that use in individuals with a history of alcoholism should be avoided (due to increased risk of dependence).

1.1.5.2 If alcohol withdrawal seizures develop in a person during treatment for acute alcohol withdrawal, review their withdrawal drug regimen.

1.1.5.3 Do not offer phenytoin to treat alcohol withdrawal seizures.

## **1.2 Wernicke's encephalopathy**

1.2.1.1 Offer thiamine to people at high risk of developing, or with suspected, Wernicke's encephalopathy. Thiamine should be given in doses toward the upper end of the 'British national formulary' range. It should be given orally or parenterally as described in recommendations 1.2.1.2 to 1.2.1.4.

1.2.1.2 Offer prophylactic oral thiamine to harmful or dependent drinkers:

- if they are malnourished or at risk of malnourishment **or**
- if they have decompensated liver disease **or**
- if they are in acute withdrawal **or**
- before and during a planned medically assisted alcohol withdrawal.

1.2.1.3 Offer prophylactic parenteral thiamine followed by oral thiamine to harmful or dependent drinkers:

- if they are malnourished or at risk of malnourishment **or**
- if they have decompensated liver disease  
**and in addition**
- they attend an emergency department **or**
- are admitted to hospital with an acute illness or injury.

1.2.1.4 Offer parenteral thiamine to people with suspected Wernicke's encephalopathy. Maintain a high level of suspicion for the possibility of Wernicke's encephalopathy, particularly if the person is intoxicated. Parenteral treatment should be given for a minimum of 5 days, unless Wernicke's encephalopathy is excluded. Oral thiamine treatment should follow parenteral therapy.

## **1.3      *Alcohol-related liver disease***

### **1.3.1      **Assessment and diagnosis of alcohol-related liver disease****

1.3.1.1      Exclude alternative causes of liver disease in people with a history of harmful or hazardous drinking who have abnormal liver blood test results.

1.3.1.2      Refer people to a specialist experienced in the management of alcohol-related liver disease to confirm a clinical diagnosis of alcohol-related liver disease.

1.3.1.3      Consider liver biopsy for the investigation of alcohol-related liver disease.

1.3.1.4      When considering liver biopsy for the investigation of alcohol-related liver disease:

- take into account the small but definite risks of morbidity and mortality
- discuss the benefits and risks with the patient **and**
- ensure informed consent is obtained.

1.3.1.5      In people with suspected acute alcohol-related hepatitis, consider a liver biopsy to confirm the diagnosis if the hepatitis is severe enough to require corticosteroid treatment.

### **1.3.2 Referral for consideration of liver transplantation**

1.3.2.1 Refer patients with decompensated liver disease to be considered for assessment for liver transplantation if they:

- still have decompensated liver disease after best management and 3 months' abstinence from alcohol **and**
- are otherwise suitable candidates for liver transplantation<sup>16</sup>.

### **1.3.3 Corticosteroid treatment for alcohol-related hepatitis**

1.3.3.1 Offer corticosteroid<sup>17</sup> treatment to people with severe acute alcohol-related hepatitis and a discriminant function<sup>18</sup> of 32 or more.

### **1.3.4 Nutritional support for alcohol-related hepatitis**

1.3.4.1 Assess the nutritional requirements of people with acute alcohol-related hepatitis. Offer nutritional support if needed<sup>19</sup> and consider using nasogastric tube feeding.

## **1.4 Alcohol-related pancreatitis**

### **1.4.1 Diagnosis of chronic alcohol-related pancreatitis**

1.4.1.1 To inform a diagnosis of chronic alcohol-related pancreatitis use a combination of:

- the person's symptoms
- an imaging modality to determine pancreatic structure **and**
- tests of pancreatic exocrine and endocrine function.

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<sup>16</sup> For the nationally agreed guidelines for liver transplant assessment in the context of alcohol-related liver disease, see [www.uktransplant.org.uk/ukt/about\\_transplants/organ\\_allocation/pdf/liver\\_advisory\\_group\\_alcohol\\_guidelines-november\\_2005.pdf](http://www.uktransplant.org.uk/ukt/about_transplants/organ_allocation/pdf/liver_advisory_group_alcohol_guidelines-november_2005.pdf)

<sup>17</sup> Corticosteroids are used in UK clinical practice in the management of severe alcohol-related hepatitis. At the time of writing (May 2010), prednisolone did not have UK marketing authorisation for this indication. Informed consent should be obtained and documented.

<sup>18</sup> Maddrey's discriminant function (DF) was described to predict prognosis in alcohol-related hepatitis and identify patients suitable for treatment with steroids. It is  $4.6 \times [\text{prothrombin time} - \text{control time (seconds)}] + \text{bilirubin in mg/dl}$ . To calculate the DF using bilirubin in micromol/l divide the bilirubin value by 17 ([www.mdcalc.com/maddreys-discriminant-function-for-alcoholic-hepatitis](http://www.mdcalc.com/maddreys-discriminant-function-for-alcoholic-hepatitis)).

<sup>19</sup> See 'Nutrition support in adults: oral nutrition support, enteral tube feeding and parenteral nutrition'. Clinical guideline 32 (2006). Available from [www.nice.org.uk/guidance/CG32](http://www.nice.org.uk/guidance/CG32)

1.4.1.2 Use computed tomography as the first-line imaging modality for the diagnosis of chronic alcohol-related pancreatitis in people with a history and symptoms suggestive of chronic alcohol-related pancreatitis.

#### **1.4.2 Pancreatic surgery versus endoscopic therapy for chronic alcohol-related pancreatitis**

1.4.2.1 Refer people with pain from chronic alcohol-related pancreatitis to a specialist centre for multidisciplinary assessment.

1.4.2.2 Offer surgery, in preference to endoscopic therapy, to people with pain from large-duct (obstructive) chronic alcohol-related pancreatitis.

1.4.2.3 Offer coeliac axis block, splanchnicectomy or surgery to people with poorly controlled pain from small-duct (non-obstructive) chronic alcohol-related pancreatitis.

#### **1.4.3 Prophylactic antibiotics for acute alcohol-related pancreatitis**

1.4.3.1 Do not give prophylactic antibiotics to people with mild acute alcohol-related pancreatitis, unless otherwise indicated.

#### **1.4.4 Nutritional support for acute alcohol-related pancreatitis**

1.4.4.1 Offer nutritional support<sup>20</sup> to people with acute alcohol-related pancreatitis:

- early (on diagnosis) **and**
- by enteral tube feeding rather than parenterally where possible.

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<sup>20</sup> See 'Nutrition support in adults: oral nutrition support, enteral tube feeding and parenteral nutrition'. Clinical guideline 32 (2006). Available from [www.nice.org.uk/guidance/CG32](http://www.nice.org.uk/guidance/CG32)



**1.4.5 Enzyme supplementation for chronic alcohol-related pancreatitis**

- 1.4.5.1 Offer pancreatic enzyme supplements to people with chronic alcohol-related pancreatitis who have symptoms of steatorrhoea or poor nutritional status due to exocrine pancreatic insufficiency.
- 1.4.5.2 Do not prescribe pancreatic enzyme supplements to people with chronic alcohol-related pancreatitis if pain is their only symptom.

## 2 Notes on the scope of the guidance

NICE guidelines are developed in accordance with a scope that defines what the guideline will and will not cover. The scope of this guideline is available from [www.nice.org.uk/guidance/CG100](http://www.nice.org.uk/guidance/CG100) – click on ‘How this guidance was produced’.

*The guideline covers the care of adults and young people (aged 10 years and older) who have an alcohol-use disorder and whose condition is wholly alcohol-attributable or where alcohol is a contributory cause. It does not cover the care of women who are pregnant or children younger than 10 years.*

### How this guideline was developed

NICE commissioned the National Collaborating Centre for Chronic Conditions (now the National Clinical Guideline Centre for Acute and Chronic Conditions) to develop this guideline. The Centre established a guideline development group (see appendix A), which reviewed the evidence and developed the recommendations. An independent Guideline Review Panel oversaw the development of the guideline (see appendix B).

There is more information about how NICE clinical guidelines are developed on the NICE website ([www.nice.org.uk/HowWeWork](http://www.nice.org.uk/HowWeWork)). A booklet, ‘How NICE clinical guidelines are developed: an overview for stakeholders, the public and the NHS’ (fourth edition, published 2009), is available from NICE publications (phone 0845 003 7783 or email [publications@nice.org.uk](mailto:publications@nice.org.uk) and quote reference N1739).

## 3 Implementation

NICE has developed tools to help organisations implement this guidance (see [www.nice.org.uk/guidance/CG100](http://www.nice.org.uk/guidance/CG100)).

## **4 Research recommendations**

The Guideline Development Group has made the following recommendations for research, based on its review of evidence, to improve NICE guidance and patient care in the future. The Guideline Development Group's full set of research recommendations is detailed in the full guideline (see section 5).

### **4.1 *Admission to hospital for acute alcohol withdrawal***

What is the clinical and cost effectiveness of admitting people who attend hospital in mild or moderate acute alcohol withdrawal for unplanned medically assisted alcohol withdrawal compared with no admission and a planned medically assisted alcohol withdrawal with regard to the outcome of long-term abstinence?

#### **Why this is important**

People presenting at a hospital who are at risk of or have alcohol withdrawal seizures or delirium tremens need admission for medical management. People with milder withdrawal are not usually admitted, but given advice and provided with information regarding local outpatient alcohol addiction services. One of the concerns with this model is that the opportunity for intervention may be lost and that many of these people may never contact addiction services. Given that abstinence is the goal, it may be that admission for these people maximises the likelihood of achieving this goal. The concerns with admission are that it is costly, the patients may not be motivated and there has been no opportunity for psychological input prior to the medically assisted withdrawal from alcohol.

The research should aim to compare the two models of treatment with regard to the primary goal of abstinence. Health economic analysis should aim to determine the cost effectiveness of each approach.

### **4.2 *Dosing regimens for acute alcohol withdrawal***

What are the safety and efficacy of symptom-triggered, fixed-dosing and front-loading regimens for the management of acute alcohol withdrawal?

### **Why this is important**

Traditionally, acute alcohol withdrawal has been managed by administering medication, typically benzodiazepines, according to a predetermined tapered-dosing schedule over a specified number of days (with the option for additional doses for breakthrough symptoms). This is called fixed-dosing. In contrast, medication can be administered in response to a person's individual signs and symptoms (symptom-triggered) or by giving an initial 'loading' dose (front-loading) in conjunction with a symptom-triggered or 'as required' regimen.

The safety and efficacy of symptom-triggered or front-loading regimens in comparison to the 'traditional' fixed-dose regimen needs to be established in patients admitted to acute hospital settings who undergo unplanned acute alcohol withdrawal. Staff and patients' experiences in conjunction with objective measures of acute alcohol withdrawal need to be collected.

### **4.3 *Drugs for the management of alcohol withdrawal***

What is the efficacy and cost effectiveness of clomethiazole compared with chlordiazepoxide or carbamazepine or benzodiazepines for the treatment of acute alcohol withdrawal with regard to the outcomes of withdrawal severity, risk of seizures, risk of delirium tremens, length of treatment and patient satisfaction?

### **Why this is important**

Clomethiazole has powerful, short-acting, sedative, tranquilising and anticonvulsant properties which are mediated through an indirect effect on gamma-aminobutyric acid (GABA) receptors in the brain. It has fallen out of favour in many units for the management of acute alcohol withdrawal because of reports of dependence and concerns regarding over-sedation. These have been problems in the outpatient use of clomethiazole, but it has now been restricted to the inpatient setting, where clomethiazole may be of great value.

There are limited studies comparing clomethiazole with other agents. As such, an appropriately powered study comparing clomethiazole to chlordiazepoxide

or carbamazepine or benzodiazepines with regard to the outcomes described above would help to define the role of this potentially very useful drug.

#### **4.4      *Assessment and monitoring***

What is the clinical and cost effectiveness of interventions delivered in an acute hospital setting by an alcohol specialist nurse compared with those managed through acute hospital setting with no input from a specialist nurse?

##### **Why this is important**

Alcohol-related problems are an important public health problem in the UK. Many patients present to acute services and are managed according to local pharmacotherapeutic regimens. Coordination of the management of the acute withdrawal episode with the long-term management of the patient can be complex. Prevention of Wernicke's encephalopathy, assessment for liver and extra-hepatic disease, therapies targetting alcohol addiction and the long-term management of the patient's physical, mental and social wellbeing are all components of the care. It is considered that better management during the hospital admission may lead to better outcomes with regard to long-term abstinence and health. Studies investigating the impact of an alcohol specialist nurse on these outcomes are required.

#### **4.5      *Wernicke's encephalopathy***

What is the clinical and cost effectiveness of the use of parenteral versus oral thiamine in preventing the first onset of Wernicke's encephalopathy in people undergoing medically assisted alcohol withdrawal?

##### **Why this is important**

Wernicke's encephalopathy has a devastating effect on the sufferer and can occur when people are withdrawing from alcohol. It is thought to be caused by a lack of thiamine due to poor diet and/or absorption at a time of increased requirement for the vitamin (for cerebral functions in particular), although little is known about the mechanisms involved. There is some theoretical and trial evidence to suggest that parenteral replacement elevates blood levels more quickly than oral replacement, however it is not known if this is clinically

significant, and there is no convincing clinical evidence to suggest which route and dose of thiamine is most effective at preventing Wernicke's encephalopathy. This is important as parenteral dosing uses additional resources, is unpleasant for the patient and has a very small risk of anaphylaxis. Having a placebo arm is probably not acceptable, given the risks of significant brain damage.

## **5 Other versions of this guideline**

### **5.1 Full guideline**

The full guideline, 'Alcohol-use disorders: diagnosis and clinical management of alcohol-related physical complications' contains details of the methods and evidence used to develop the guideline. It is published by the National Clinical Guidelines Centre for Acute and Chronic Conditions (formerly the National Collaborating Centre for Chronic Conditions), and is available from our website ([www.nice.org.uk/guidance/CG100/FullGuidance](http://www.nice.org.uk/guidance/CG100/FullGuidance)).

### **5.2 Quick reference guide**

A quick reference guide for healthcare professionals is available from [www.nice.org.uk/guidance/CG100/QuickRefGuide](http://www.nice.org.uk/guidance/CG100/QuickRefGuide)

For printed copies, phone NICE publications on 0845 003 7783 or email [publications@nice.org.uk](mailto:publications@nice.org.uk) (quote reference number N2191).

### **5.3 'Understanding NICE guidance'**

A summary for patients and carers ('Understanding NICE guidance') is available from [www.nice.org.uk/guidance/CG100/PublicInfo](http://www.nice.org.uk/guidance/CG100/PublicInfo)

For printed copies, phone NICE publications on 0845 003 7783 or email [publications@nice.org.uk](mailto:publications@nice.org.uk) (quote reference number N2192).

We encourage NHS and voluntary sector organisations to use text from this booklet in their own information about alcohol-related physical complications.

## 6 Related NICE guidance

### Published

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](http://www.nice.org.uk/guidance/PH24)

School-based interventions on alcohol. NICE public health guidance 7 (2007). Available from [www.nice.org.uk/guidance/PH7](http://www.nice.org.uk/guidance/PH7)

Interventions to reduce substance misuse among vulnerable young people. NICE public health guidance 4 (2007). Available from [www.nice.org.uk/guidance/PH4](http://www.nice.org.uk/guidance/PH4)

Nutrition support in adults: oral nutrition support, enteral tube feeding and parenteral nutrition. NICE clinical guideline 32 (2006). Available from [www.nice.org.uk/guidance/CG32](http://www.nice.org.uk/guidance/CG32)

### Under development

NICE is developing the following guidance (details available from [www.nice.org.uk](http://www.nice.org.uk)):

- Pregnancy and complex social factors. NICE clinical guideline (publication expected June 2010).
- Personal, social and health education focusing on sex and relationships and alcohol education. NICE public health guidance (publication date expected January 2011).
- Alcohol-use disorders: diagnosis, assessment and management of harmful drinking and alcohol dependence. NICE clinical guideline (publication expected February 2011).



## **7            Updating the guideline**

NICE clinical guidelines are updated so that recommendations take into account important new information. New evidence is checked 3 years after publication, and healthcare professionals and patients are asked for their views; we use this information to decide whether all or part of a guideline needs updating. If important new evidence is published at other times, we may decide to do a more rapid update of some recommendations. Please see our website for information about updating the guideline.

## **Appendix A: The Guideline Development Group and NICE project team**

### ***Guideline Development Group***

#### **Anthony Rudd (GDG Chair)**

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#### **Adam Bakker**

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#### **Adrian Boyle**

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Substance Misuse Specialist, The Huntercombe Centre and Counted4 CIC, Sunderland.

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#### **Georgina Kirwin**

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Senior Project Manager, National Clinical Guideline Centre for Acute and Chronic Conditions.

**Philippe Laramee**

Health Economist, National Clinical Guideline Centre for Acute and Chronic Conditions.

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***NICE project team***

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**Christine Carson (from January 2010)**

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## **Appendix B: The Guideline Review Panel**

The Guideline Review Panel is an independent panel that oversees the development of the guideline and takes responsibility for monitoring adherence to NICE guideline development processes. In particular, the panel ensures that stakeholder comments have been adequately considered and responded to. The panel includes members from the following perspectives: primary care, secondary care, lay, public health and industry.

### **Dr John Hyslop (Chair)**

Consultant Radiologist, Royal Cornwall Hospital NHS Trust

### **Dr Ash Paul**

Medical Director, Bedfordshire Primary Care Trust

### **Mr Jon Hopper**

Medical Director (Northern Europe), ConvaTec Ltd

### **Professor Liam Smeeth**

Professor of Clinical Epidemiology, London School of Hygiene and Tropical Medicine

### **Mr Peter Gosling**

Lay member

## **Appendix C: The algorithms**

Care pathways can be found on pages 7 and 11 of the quick reference guide, available from [www.nice.org.uk/guidance/CG100/QuickRefGuide](http://www.nice.org.uk/guidance/CG100/QuickRefGuide)