evidence note

NHS Quality Improvement Scotland

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# Screening tools, detoxification and vitamin supplementation for alcohol dependence

## Description of the topic

Alcohol misuse in Scotland is a significant problem and evidence shows that 27% of men and 14% of women are drinking more than the weekly recommended levels[1]. The overall estimated cost to society is £1 billion per year[2]. Alcohol dependence is defined as a cluster of physiological, behavioural and cognitive phenomena in which the use of alcohol assumes higher priority for an individual than other behaviours[3]. The level of dependence can either be moderate or severe. The first step in helping people overcome their alcohol dependence is detoxification. Detoxification is deliberate alcohol withdrawal managed clinically in an inpatient or outpatient setting. This evidence note focuses on screening tools, detoxification, drugs and adjunctive vitamin supplementation for alcohol dependence. It provides the best available evidence from published secondary literature to inform planners and practitioners.

## Screening and detection

It has been argued that alcohol screening tools should be easy to use, with both high sensitivity and specificity in detecting hazardous and harmful drinking, abuse and dependency[4,5].

Internationally recognised screening tools used widely in different settings are Alcohol Use Disorders Identification Test (AUDIT) and its shortened versions like AUDIT-C and AUDIT-PC; Fast Alcohol Screening Test (FAST); Paddington Alcohol Test (PAT); Michigan Alcoholism Screening Tool (MAST); Cut down Annoyed Guilty Eye-opener (CAGE) and CAGE Plus; T-ACE and TWEAK. The accuracy of these tools is extremely variable and specific to the setting and also in detecting certain levels of problem drinkers. However, the use of screening tools is very limited in Scotland. Results of a recent audit concluded that only two patients have been screened in Scottish Accident and Emergency Care departments using a recognised alcohol screening tool[6].

## Clinical effectiveness of screening tools

AUDIT is a detailed alcohol screening test used for general screening and is effective in detecting at risk, hazardous or harmful drinkers. It is time consuming and difficult to administer in a community setting[4]. Abbreviated versions of AUDIT are good at detecting heavy drinking but inferior to full AUDIT in detecting

## Key points

- Appropriate screening tools for detecting people with alcohol dependence that may need detoxification are Fast Alcohol Screening Test (FAST) in A&E settings and Cut down Annoyed Guilty Eye-opener (CAGE) plus or FAST in community settings.
- People with moderate alcohol dependence can be effectively and safely detoxified in community/home/outpatient settings. However, people with severe alcohol dependence will require care in an inpatient setting with close monitoring by specialists. Outpatient and home detoxification settings are clinically effective and less costly than inpatient settings.
- Benzodiazepines are the best choice of drugs and chlordiazepoxide is preferred for treating uncomplicated detoxification due to its reduced potential for dependency.
- High dose parenteral thiamine is an effective treatment for Wernicke's encephalopathy. Vitamin supplements should be prescribed where nutritional deficiencies are likely.

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alcohol dependency[4]. FAST, a two-stage screening tool based on four AUDIT items is easy to perform and less time consuming. It has been developed for use in A&E settings. Moreover, evidence suggests that it is superior to other tools in classifying respondents as either non-hazardous or hazardous drinkers with high sensitivity and specificity[4]. CAGE is less time consuming and easy to use by a practitioner. Evidence suggests that it is a good screening tool for detecting the respondent's lifetime alcohol experience but not their more recent habits. CAGE Plus has addressed these issues, and consists of CAGE with two additional questions on maximum daily and weekly consumption of alcohol[5].

Evidence from the published literature suggests that the most useful screening tools for detecting alcohol dependency are FAST in A&E settings and FAST or CAGE Plus in community settings. Moreover, a full AUDIT is required to assess the degree of dependence and withdrawal symptoms. T-ACE and TWEAK are more sensitive and specific for screening pregnant women. These can be used with ease and near accuracy. Laboratory tests do not perform well as screening instruments[4,5,7].

## Detoxification: Settings

Standard treatment for the majority of people with alcohol dependence has moved from inpatient to outpatient or community settings. Evidence shows that inpatient detoxification in acute medical and psychiatric wards is suggested only when withdrawal is likely to be complicated (such as delirium or seizures with high alcohol intake, Wernike's encephalopathy, psychiatric conditions, medical treatment for other illness and head injuries)[4,5].

Community-based detoxification is delivered either at home, as an outpatient or in supported residential facilities, and is an effective and safe treatment for patients with mild to moderate withdrawal symptoms. Although it is a good choice in all areas it might be the best option in rural areas[4,5]. It involves daily visits by a psychiatric nurse to assess withdrawal and complications. Prescribing is undertaken by the general practitioner or specialist service medical staff in line with a locally agreed protocol. Community-based supported residential facilities for detoxification are required for homeless patients or those with no support from family and friends. NHS Quality Improvement Scotland (NHS QIS) has published guidance on the prevention of relapse after detoxification[9].

## Clinical effectiveness of detoxification settings: community/home/outpatient detoxification versus inpatient detoxification

Evidence from the results of reviews by the National Treatment Agency for Substance Misuse (NTA), Ludbrook et al and Scottish Intercollegiate Guidelines Network (SIGN) on comparison of detoxification treatments for alcohol dependence at community/home/outpatient and inpatient settings found no difference in clinical effectiveness and suggests that the majority of patients with mild and moderate withdrawal symptoms can be effectively and safely detoxified in community/home/outpatient settings[4,5,7].The results of two UK studies indicate that shortened or partial inpatient regime to a day-patient regime did not have an impact on effectiveness[10,11].

## Cost effectiveness of detoxification settings: community/home/outpatient detoxification versus inpatient detoxification

Reviews of the cost-effectiveness literature produced evidence to support the cost effectiveness of home and outpatient detoxification. When the clinical evidence demonstrates at least equivalence between home and outpatient detoxification and inpatient detoxification, home and outpatient detoxification will be the most cost effective given the inpatient detoxification is the most expensive.

The NTA review of the evidence on cost effectiveness of similar intensive alcohol treatments delivered in inpatient and outpatient settings found a large cost difference and concluded that outpatient care is more cost effective than inpatient care but inpatient care will be required for some users[4]. Other reviews also have shown home detoxification and outpatient detoxification to be cost effective compared with inpatient detoxification[5,7]. An earlier economic review by Godfrey (1994) which included three US and one UK study showed that clinical effectiveness was the same or improved to some extent in day

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patient or outpatient groups, and costs were 9–20 times higher in inpatient groups[12]. As the majority of the studies in the review are from the US the costs may differ from UK costs and therefore need to be interpreted with some caution.

Studies specific to the UK are limited[13,14]. However, the evidence from these studies showed that community treatment was as clinically effective as inpatient treatment and cost less. The results of a UK study by Long et al 1998 indicated that shortening the inpatient regime to a day-patient regime did not alter clinical outcomes but was less costly[11]. The Outcomes of Social Care for Adults (OSCA) study found that the overall costs were similar for services of similar length delivered in partial inpatient and day-care settings[10]. Both these studies suggested that time limited residential programmes are cost effective.

The results from UK studies are in line with international evidence, but from the available evidence-based literature it is difficult to arrive at the conclusion that all inpatient treatments are less cost effective than outpatient treatments as the evaluations involved a broad range of treatment populations and wider social aspects were not considered.

## Clinical effectiveness of drug interventions in detoxification

Published evidence shows that benzodiazepines are currently the best class of drug for alcohol dependence detoxification and chlordiazepoxide is preferred for treating uncomplicated detoxification in the community on the basis of safety and effectiveness[4,5,7]. It should be used in primary care for a maximum period of 7 days[5]. Diazepam is an alternative option but is more likely to cause dependence and requires greater supervision[4].

## Cost effectiveness of drug interventions in detoxification

There is no evidence on the cost effectiveness of drugs used for detoxification. Further evidence is required about the cost effectiveness of drugs in a UK context.

## Vitamin supplementation in detoxification

Vitamin supplements are given at detoxification to prevent conditions like Wernicke's encephalopathy which is caused by thiamine deficiency and when untreated can lead to an irreversible form of brain damage known as Korsakoff's syndrome. Results of a recent audit in A&E departments in Scotland found that a quarter of people with alcohol dependence had been prescribed oral thiamine prior to presentation and parenteral thiamine was given to people with severe dependence and withdrawal syndrome at admission, however the dosage was incorrect in more than half of the treatments[15].

## Cost effectiveness of vitamin supplementation in detoxification

There is no evidence on the cost effectiveness of vitamin supplementation which is seen as an adjunct to detoxification. Further evidence is required about the cost effectiveness of vitamin supplementation in a UK context.

## Risk and safety of detoxification

Detoxification is often a simple procedure but there are potentially life-threatening complications. These include severities of alcohol withdrawal such as tremors, seizures and delirium. More severe complications like pyrexia, liver decompensation, associated infections, Wernike's encephalopathy and severe psychiatric conditions including suicidal intents require hospital admission[4]. Benzodiazepines are safe for short-term use but have significant potential for abuse and dependence, therefore SIGN recommends use of this class of drug for a maximum period of 7 days in primary care [5]. Risk of anaphylaxis with parenteral vitamin supplementation is very low and probable with the intramuscular route; so far only one case is ascribed to intramuscular Pabrinex since 1996[5]. Detoxification with physical and mental complications should be managed under specialist care[4].

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## Ongoing research

- NHS Quality Improvement Scotland. Understanding alcohol misuse in Scotland. Harmful drinking four: the use of intravenous B vitamins. (Expected publication date - Nov 2007).
- NHS Quality Improvement Scotland. Overview report on alcohol misuse in Scotland. (Expected publication date – March 2008)
- Scottish Executive. Scottish alcohol research framework. Edinburgh: Scottish Executive; 2007. (This document contains details of ongoing research)

## Equality & Diversity

NHS QIS is committed to equality and diversity. This document and the research, on which it is based, have been assessed for any likely impact on the six equality groups defined by age, gender, race/ethnicity, religion/faith, disability and sexual orientation. For a summary of the equality and diversity impact assessment, please see http://www.nhshealthquality.org/nhsqis/files/EQRIA0020.

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