UK National Screening Committee

Screening for Alcohol Misuse

8 February 2017

Aim

1. To ask the UK National Screening Committee (UK NSC) to make a recommendation, based upon the evidence presented in this document, whether or not screening for Alcohol misuse meets the UK NSC criteria to support the introduction of a population screening programme.

This document provides background on the item addressing screening for alcohol misuse.

Current recommendation

2. The 2011 review of screening for alcohol misuse concluded that systematic population screening is not recommended.

   This was due to insufficient evidence assessing the criteria relating to the test and to the long-term effectiveness of a screening programme on morbidity, mortality and social harm rates.

Review

3. The current review has been undertaken by Solutions for Public Health, in accordance with the triennial review process. https://legacyscreening.phe.org.uk/alcohol

4. The scope of this review focuses on criteria addressing the test and long term benefits of a population screening programme. This includes the identification of an independent gold standard against which the screening test can be measured, a test suitable for population screening with agreed cut-off levels for subgroups of the population, and evidence demonstrating the long-term effectiveness of a population screening programme.

5. The conclusion of this review is to retain the UK NSC recommendation not to introduce a whole population screening programme for alcohol misuse in the UK. The key reasons remain unchanged since the previous UK NSC review:

a. The test: there remains no independent gold standard against which the screening test can be measured. Existing reference standards are reliant on the self-reported behaviour and self-reported behaviour change of the patient during interviews and questioning to follow up screen positive results. Some progress has been made to identify an ethyl-based biomarker to monitor drinking behaviour in case-control studies; however these have not been assessed in the general population or in a screening context. **Criterion 4 not met.**

b. The test: AUDIT (The Alcohol Use Disorders Identification Test) remains the most extensively used and studied screening tool; however there is limited evidence to define suitable cut-off levels for subgroups of the population. The reported positive predictive values suggest that a significant proportion of adults referred on for further assessment in a whole population screening programme would have received a false positive test result. **Criterion 5 not met.**

c. The screening programme: there were no studies assessing the long-term effectiveness of a screening programme in improving morbidity, mortality or reducing social harm. There is some evidence to suggest that brief interventions can lead to reduced alcohol intake in the short to medium term, however these findings were not gathered from a screening or general population context. **Criterion 11 not met.**

Consultation

6. A three month consultation was hosted on the UK NSC website, and the following 19 organisations were contacted directly:
   Addaction, Addiction Recovery Foundation, Al-Anon, Alcohol Concern, Alcohol Focus Scotland, Alcoholics Anonymous, British Association for the Study of the Liver, British Liver Nurses' Forum, The British Liver Trust, The British Psychological Society, British Society of Gastroenterology, Faculty of Public Health, Institute of Alcohol Studies, Mental Health Foundation, Prostate UK, Royal College of General Practitioners, Royal College of Physicians, Royal College of Psychiatrist, Royal Society for Public Health.

One response was received from the British Association for the Study of the Liver (**Annex A**).

Overall, the response agreed that a population screening programme would not be a viable option at the current time. Two key problems were highlighted:

- screening was unlikely to reach the populations most at risk of the adverse consequences of alcohol misuse and
- current services are unlikely to be able to manage the increased referrals arising as a consequence of a whole population screening programme

However the response was concerned that the review's scope did not fit the context of screening for alcohol misuse. This was highlighted with reference to the emphasis on:

- the lack of an independent reference standard to confirm screening test results
- mortality and morbidity benefit as outcomes of screening rather than an emphasis on information.

An additional concern is that there was the potential for the conclusion of the report to be seen as a negative comment on the ongoing work to implement an opportunistic approach to the identification and management of alcohol misuse in primary care.

The reviewer was asked to comment on this response and updated the document where appropriate.

Recommendation

7. The Committee is asked to approve the following recommendation:

   Alcohol misuse causes serious health problems in the UK. A range of interventions are being implemented in primary care to identify alcohol misuse and address its consequences.

   A whole population screening programme would operate differently to these interventions. At the present time a whole population screening programme for alcohol misuse is not recommended.

   This is because the performance of questionnaire based screening tools in the whole population appears limited, there is no independent reference standard to confirm screen

positive results and suitable cut offs for subgroups of the adult population have not been found. In addition the long term effectiveness of screening in reducing morbidity and mortality is still lacking.

Based upon the criteria set to recommend a population screening programme, alcohol misuse met /did not meet the following primary requisites:

	Criteria	Met / Not met
The Test		
4	There should be simple, safe, precise and validated screening test.	×
5	The distribution of test values in the target population should be known and a suitable cut-off level defined and agreed.	×
The Screening Programme		
11	There should be evidence from high quality randomised controlled trials that the screening programme is effective in reducing mortality or morbidity. Where screening is aimed solely at providing information to allow the person being screened to make an "informed choice" (eg. Down's syndrome, cystic fibrosis carrier screening), there must be evidence from high quality trials that the test accurately measures risk. The information that is provided about the test and its outcome must be of value and readily understood by the individual being screened.	×

Annex A

CONSULTATION RESPONSE

Screening for alcohol misuse in adults.

Response to the external review against programme appraisal criteria for the UK National Screening Committee (UK NSC)

From British Association for the Study of the Liver (BASL)

General overview

1. The UK NSC report concludes that current knowledge concerning alcohol does not meet the stipulated criteria for a formal screening programme to be implemented. A recommendation is made, therefore, that a formal screening programme is not introduced. However, although the report's conclusion is, in a strict sense, correct with regard to UK NSC criteria for such a programme; these have been applied both too rigidly and in some instances inappropriately. In consequence the subsequent recommendation is far too limited in its scope as a response to the serious current situation with regards to alcohol misuse in the UK. It may be that the concept of an audit of behaviour is a step too far for some, although this is considered a tried and tested measure of a behavioural disorder.

The main issues with the applied criteria are as follows:

(i) The rigidity of NSC approach that dictates that there should be a 'gold standard' against which to measure the diagnostic performance of a screening test. This is clearly the case when screening for cervical or breast cancer where there is a tangible

and measurable diagnostic ‘gold standard’—namely histological evidence of malignancy. However, you can not use the same criterion to judge the validity of a screening test in a behavioural disorder, such as alcohol misuse, which may or may not at the time of screening have tangible and measurable consequences e.g. abnormal liver function tests. No consideration is given to the fact that a screening test e.g. AUDIT itself might fulfill many of the criterion required of a ‘gold standard’;

(ii) To fulfill criteria for a National Screening Programme there should be evidence from high quality RCTs that screening is effective in reducing mortality or morbidity. However, this criterion can also be satisfied if screening is aimed at providing information to allow the people being screened to make an ‘informed choice’. To this end there is evidence that use of screening tools (with or without an intervention) increases people knowledge about the risks of alcohol consumption and allows them to make decisions about their own drinking behaviour.

However the literature search undertaken as part of this review does not appear to have been designed to capture this information, while selection and appraisal of the relevant literature was undertaken by only one reviewer.

(iii) The statement that there is insufficient evidence currently to define suitable cut-off levels for subgroups of the population is not true. There are numerous published studies of the WHO audit in almost every conceivable sub-group.

There are other concerns regarding the implementation of a National Screening Programme:

(i) The feasibility of capturing the populations most at risk who traditionally avoid or can not avail themselves of programmes such as this.

(ii) Services would be overwhelmed. The facilities available to offer advice and help to those in whom screening identifies a problem are lacking. It is estimated that between 1.6 and 3.2 million people in England are alcohol dependent. In 2013-14 only 114,920 (i.e. 3.6 to 7.2%) of those affected received specialist treatment for their alcohol problems and this was successfully completed in only 43,530.

2. This report has the potential to cause harm if, as a result of the conclusions, it is inferred that screening for alcohol misuse is not supported in general. While it is stipulated in the report introduction that the remit was to review evidence on population based screening for alcohol misuse in adults and further, that it does not consider the assessment of risk covered by guidance from NICE which involves identifying people who may have an alcohol-use disorder during contact with services - this is insufficient to avoid confusion.

It is vital that the NSC is clear about the parameters of its findings, so that these are understood within the context of the review alone and that no wider interpretations should be inferred. If this is not done then subsequent misunderstandings could have a serious impact on the screening work being undertaken currently by health care practitioners in the field and that could seriously impinge on the commissioning of alcohol services.

The reasons for this are clear: the NSC's view is that the relevant evidence available currently does not yet reach the very high standard required to approve a formal population-based screening programme for alcohol but there is ample evidence both for the importance of alcohol-related health harms and for the efficacy of identifying, advising and treating people who misuse alcohol. The DH and NICE have both issued guidance based on this evidence and Local Authorities and NHS clinicians and their teams are acting on this widely.

Opportunistic screening in health care settings, which is now being extended to include, for example, NHS dental practices and Pharmacies, can be very successful. However screening is inconsistently implemented inconsistently in these settings and that needs to be addressed. In addition, Public Health England has not prioritized general population educational programmes around alcohol. This is particularly lamentable given the recent introduction of new guidelines on alcohol consumption. Thus, although this NSC document specifically mentions that it is not dealing with opportunistic screening it cannot abdicate all responsibility for this aspect of service and it certainly should not, advertently or inadvertently, do anything to undermine the provision of current services, however imperfect.

Specific points

Utility of the AUDIT questionnaire as a gold standard

The goals of screening for alcohol use disorder are to estimate the person's risk level; to identify those at risk because they are drinking beyond defined limits and to identify those with evidence of an active problem, i.e., with adverse consequences related to their drinking. This screening should pave the way to further assessment, definitive diagnosis, and a treatment plan. The ideal alcohol-screening questionnaire should be brief and highly sensitive and specific for identifying the spectrum of alcohol misuse. Also, it should be easy to recall so it can be part of routine face-to-face discussion with people during follow-up visits. Further, it should include questions that focus on the consequences of drinking as well as on the quantity and frequency of alcohol consumption. It should also take into account factors such as the patient's age, sex, race or ethnicity, and pregnancy status, as these can influence the effectiveness of the screening method.

The WHO designed and devised AUDIT questionnaire, which consists of 10 questions about recent alcohol use, alcohol dependence symptoms, and alcohol-related problems, fulfills these criteria and, for many workers in the field, fulfills the criteria for a diagnostic gold standard. It was developed and evaluated over a period of two decades, and has been found to provide an accurate measure of risk across gender, age, and cultures. It is the only screening test specifically designed for international use; it identifies, with high sensitivity and specificity, hazardous and harmful alcohol use, as well as possible alcohol dependence; it is brief, rapid, and flexible to administer; it is consistent with ICD-10 definitions of harmful alcohol use and alcohol dependence; and, focuses on recent alcohol use. Details of how the questionnaire was devised and validated might make this clearer.

Development of the AUDIT questionnaire

The purpose of the AUDIT project was to identify persons with early alcohol problems using procedures that were suitable for health systems in both developing and developed countries. The process was undertaken as follows:

- The investigators reviewed a variety of self-reported, laboratory, and clinical procedures that had been used for this purpose in different countries.

- They then undertook a cross-national study, involving nearly 2000 people from a variety of health care facilities, including specialized alcohol treatment centres in Norway, Australia, Kenya, Bulgaria, Mexico, and the United States of America in order to select the best features to best distinguished low-risk drinkers from those with harmful drinking; of the people included 64% were current drinkers, 25% of whom were alcohol dependent.

- Participants underwent physical examination, standard blood test markers of alcohol misuse, as well as an extensive interview assessing demographic characteristics, medical history, health complaints, use of alcohol and drugs, psychological reactions to alcohol, problems associated with drinking, and family history of alcohol problems.

- Items were selected for the AUDIT from this pool of questions primarily on the basis of correlations with daily alcohol intake, frequency of consuming six or more drinks per drinking episode, and their ability to discriminate hazardous and harmful drinkers. Items were also chosen on the basis of face validity, clinical relevance, and coverage of relevant conceptual domains (i.e., alcohol use, alcohol dependence, and adverse consequences of drinking). Finally, special attention in item selection was given to gender appropriateness and cross-national generalisability.

- Sensitivities and specificities of the selected test items were computed for multiple criteria (i.e., average daily alcohol consumption; recurrent intoxication; the presence of at least one dependence symptom; diagnosis of alcohol abuse or dependence; and self-perception of a drinking problem). Various cut-off points in total scores were considered to identify the value with optimal sensitivity and specificity to distinguish hazardous and harmful alcohol use.

- In addition, validity was also computed against a composite diagnosis of harmful use and dependence. In the test development samples, a cut-off value of 8 points yielded sensitivities for the AUDIT for various indices of problematic drinking that were generally in the mid 0.90's. Specificities across countries and across criteria averaged in the 0.80's.

Thus, the AUDIT differs from other self-report screening tests in that it was based on data collected from a large multinational sample, used an explicit conceptual statistical rationale for item selection, emphasizes identification of hazardous drinking rather than long-term dependence and adverse drinking consequences, and focuses primarily on symptoms occurring during the recent past rather than 'ever.'

AUDIT has been used extensively to screen for alcohol consumption and related risks in primary care settings, but has also been used effectively elsewhere *viz* emergency services; general hospital wards or outpatient clinics specifically targeting people with disorders known to be associated with alcohol dependence (e.g., pancreatitis, cirrhosis, gastritis, tuberculosis, neurological disorders, cardiomyopathy); psychiatric services; the criminal justice system; and the work-place. The WHO Expert Committee also recommended that it might be used to screen those thought to be at high risk of developing alcohol-related problems: middle-aged males, adolescents, migrant workers, and certain occupational groups (such as business executives, entertainers, sex workers, publicans, and seamen). The nature of the risk differs by age, gender, drinking context, and drinking pattern, with socio-cultural factors playing an important role in the definition and expression of alcohol-related problems.

In addition, the AUDIT provides good discrimination in a variety of subpopulations including: drug users, the unemployed, university students, elderly hospital patients, and the homeless.

The predictive validity of the AUDIT score and future indicators of alcohol-related problems and more global life functioning has also been investigated. Claussen & Aasland (1993), reported that the likelihood of remaining unemployed over a two year period was 1.6 times higher for individuals with scores of 8 or more on the AUDIT than for comparable persons with lower scores. Conigrave and coworkers (1995) reported that in ambulatory care patients AUDIT scores predicted future occurrence of a physical disorder, as well as social

problems related to drinking. They also found that AUDIT scores also predicted health care utilization and future risk of engaging in hazardous drinking.

Is there a gold standard biomarker?

There is considerable inter-and intra-individual variation in the diagnostic performance of the currently available indirect and direct biomarkers of alcohol misuse, whether used singly or in combination. As such the AUDIT questionnaire is a useful tool for the diagnosis and categorisation of alcohol-use disorders.