

Table DS1 QUADAS critical appraisal summary

Author	Repre- sentative spectrum	Reference standard acceptable?	Acceptable delay between	Partial verification avoided?	Differential verification avoided?	Incorporation avoided?	Reference standard masked?	Index test masked	Relevant clinical information	Un-interpretible results reported?	Withdrawals explained?
Alcohol use disorder											
Adams <i>et al</i> (1992) <sup>110</sup>	No	Yes (CAGE)	Unclear	Yes	Yes	Yes	Unclear	Unclear	Yes	Yes	Yes
Berner <i>et al</i> (2007) <sup>111</sup>	Yes	Yes (AUDIT)	Yes	Yes	Yes	Unclear	Yes	Yes	Yes	No	Yes
Bush <i>et al</i> (1987) <sup>112</sup>	Yes	Yes (MAST)	Yes	Yes	No	Unclear	Unclear	Unclear	Yes	No	Yes
Cerise <i>et al</i> (1998) <sup>113</sup>	Yes	Yes (DSM)	Unclear	Yes	Yes	Unclear	Yes	Unclear	Yes	No	Yes
Cleary <i>et al</i> (1988) <sup>114</sup>	Yes	Yes (DSM)	No	Yes	Yes	Yes	Unclear	Unclear	Yes	No	Yes
Conigliaro <i>et al</i> (1998) <sup>115</sup>	Yes	Yes (AUDIT)	Unclear	Unclear	Yes	Unclear	Unclear	Unclear	Yes	No	Yes
Coulehan <i>et al</i> (1987) <sup>116</sup>	Yes	Yes (DSM)	Yes	No	Yes	Yes	No	Yes	Yes	No	No
Creek <i>et al</i> (1982) <sup>117</sup>	Yes	Yes (MAST/SMAST)	Yes	Yes	Unclear	Yes	Yes	Unclear	Yes	No	No
Curtis <i>et al</i> (1989) <sup>118</sup>	Yes	Yes (SMAST or CAGE)	Yes	No	No	Unclear	Unclear	Unclear	Yes	No	No
Dawson <i>et al</i> (1992) <sup>119</sup>	Yes	Yes (MAST)	Unclear	Yes	Yes	Unclear	Unclear	Yes	Yes	Yes	Yes
Goethe & Ahmadi (1991) <sup>120</sup>	Yes	Yes (DIS – alcohol use disorder)	Unclear	Yes	Yes	Unclear	Yes	Yes	Yes	No	Yes
Huang <i>et al</i> (2009) <sup>83</sup>	No	Yes (DSM)	Unclear	Yes	Yes	Unclear	Unclear	Unclear	Yes	No	No
Indig <i>et al</i> (2009) <sup>121</sup>	Yes	yes (AUDIT)	Yes	Yes	Yes	Unclear	Unclear	Unclear	Yes	No	Yes
Kip <i>et al</i> (2008) <sup>56</sup>	No	Yes (AUDIT)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Leckman <i>et al</i> (1984) <sup>122</sup>	Yes	Yes (MAST or MAST and CAGE)	Unclear	Yes	No	Unclear	Unclear	Yes	Yes	No	No
Martin <i>et al</i> (2002) <sup>53</sup>	No	Yes (DSM-III-R)	Yes	Yes	Yes	Unclear	Yes	Yes	Yes	No	Yes
McInnes & Powel (1994) <sup>123</sup>	No	Yes (Australian National Guidelines)	Yes	Yes	Yes	Unclear	Unclear	Unclear	Yes	No	No
Moore & Malitz (1986) <sup>124</sup>	Yes	Yes (CAGE)	Unclear	Yes	Yes	Unclear	Unclear	Unclear	Yes	No	No
Moore <i>et al</i> (1989) <sup>125</sup>	Yes	Yes (CAGE or MAST)	Yes	No	No	Unclear	Yes	Unclear	Yes	No	No
Niles & McCrady (1991) <sup>126</sup>	Yes	Yes (CAGE)	No	Yes	Yes	Unclear	Yes	Yes	Yes	No	Yes
O'Hare <i>et al</i> (2004) <sup>127</sup>	No	Yes (Alcohol Use Scale)	Unclear	Yes	Yes	Unclear	Unclear	Unclear	Yes	No	No
Rydon <i>et al</i> (1992) <sup>28</sup>	Yes	Yes (SMAST or CAGE)	Yes	Yes	Yes	Unclear	Unclear	Unclear	Yes	Yes	Yes
Schmidt <i>et al</i> (1995) <sup>128</sup>	Yes	Yes (DSM)	Unclear	Yes	Yes	Unclear	Unclear	Unclear	Yes	No	No
Seale <i>et al</i> (2005) <sup>129</sup>	Yes	Yes (AUDIT-C)	No	Yes	Yes	Unclear	Unclear	Unclear	Yes	No	Yes
Seppä <i>et al</i> (2004) <sup>130</sup>	Yes	Yes (Five-Shot Total Questionnaire)	Unclear	Yes	Yes	Unclear	Unclear	Unclear	Yes	No	Yes
Sherin <i>et al</i> (1982) <sup>131</sup>	Yes	Yes (MAST)	Unclear	Yes	Yes	Unclear	Unclear	Yes	Yes	No	Yes
Shore <i>et al</i> (2002) <sup>132</sup>	No	Yes (DSM)	Unclear	Yes	Yes	Unclear	Unclear	Unclear	Yes	No	No
Silverman <i>et al</i> (1992) <sup>133</sup>	Yes	Yes (DSM-III)	Unclear	Yes	Yes	Unclear	Unclear	Yes	Yes	No	Yes
Smothers <i>et al</i> (2004) <sup>134</sup>	Yes	Yes (DSM-IV)	Yes	Yes	Yes	Unclear	Unclear	Unclear	Yes	Yes	Yes
Woodall (1988) <sup>135</sup>	Yes	Yes (SMAST and physician chart reviews)	Unclear	Yes	Yes	No	Unclear	Unclear	Yes	No	Yes
Dependence											
Chen <i>et al</i> (2004) <sup>136</sup>	Yes	Yes (AUDIT and SCAN)	No	No	Yes	Unclear	Unclear	Unclear	Yes	No	Yes
McCusker <i>et al</i> (1971) <sup>a,137</sup>	Yes	Yes (Alcohol Abuse Scale)	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	No	Yes
Rienzi (1992) <sup>54</sup>	Yes	Yes (MAST)	Unclear	Yes	Yes	Unclear	Unclear	Yes	Yes	No	No
Rumpf <i>et al</i> (2001) <sup>138</sup>	Yes	Yes (DSM)	Yes	Yes	Yes	Unclear	Unclear	Yes	Yes	No	Yes
Wu <i>et al</i> (2006) <sup>139</sup>	Yes	Yes (DSM)	Yes	Yes	Yes	Unclear	Unclear	Unclear	Yes	No	Yes
Intoxication											
Bostwick & Seaman (2004) <sup>140</sup>	Yes	Yes (blood alcohol concentration)	No	No	Yes	Unclear	No	No	Yes	No	No
Gentilelo <i>et al</i> (1999) <sup>55</sup>	No	Yes (SMAST, CAGE or blood alcohol concentration)	Yes	Yes	Yes	Unclear	Yes	Unclear	Yes	No	Yes
Mahler <i>et al</i> (2009) <sup>141</sup>	Yes	Yes (blood alcohol concentration)	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	No	Yes
Silver & Sporty (1990) <sup>142</sup>	Yes	Yes (blood alcohol concentration)	No	Yes	Yes	Unclear	Yes	Yes	Yes	No	Yes

AUDIT, The Alcohol Use Disorders Identification Test; MAST, Michigan Alcoholism Screening Test; SMAST, Short Michigan Alcoholism Screening Test; DIS, Diagnostic Interview Schedule; SCAN, Schedules for Clinical Assessment in Neuropsychiatry.  
a. Alcohol use disorder and dependence were studied.

**Table DS2** Methodological and statistical summary of alcohol recognition studies

	Methodological summary						Statistical summary							
	Country	Alcohol problem as defined by original investigators	Number of clinicians studied	Setting	Clinical judgement method	Gold standard	Method of ascertaining gold standard	Female proportion	Age, mean	Prevalence	Total sample size	All cases (TP+FN)	Sensitivity	Specificity
Hospital setting														
Adams <i>et al</i> (1992) <sup>110</sup>	USA	Alcoholic	NR	Emergency department	Chart review	CAGE	Self-report	0.530	74	0.199	146	29	0.207	NR
Bush <i>et al</i> (1987) <sup>112</sup>	USA	Alcohol abuse	NR	General hospital	Chart review and prospective interview	DSM-III + MAST >2	Clinical interview	NR	49	NR	518	37	0.270	NR
Cerise <i>et al</i> (1998) <sup>113</sup>	USA	Alcoholic	30 (medical residents)	Internal medicine ward	Chart review	DIS (DSM-III)	Clinical interview	0.49	44	0.173	197	34	0.706	0.963
Chen <i>et al</i> (2004) <sup>136</sup>	Taiwan	Alcohol abuse	NR	General hospital	Chart review	SCAN (Chinese version) – DSM-IV alcohol abuse	Clinical assessment/ interview	0.367	42.5	0.033	422	14	0.000	NR
Conigliaro <i>et al</i> (1998) <sup>115</sup>	USA	Alcoholic	NR	VA medical center	Chart review	10-item AUDIT	Self-report	NR	60	0.081	706	57	0.579	NR
Curtis <i>et al</i> (1989) <sup>118</sup>	USA	Alcohol problems	32	General medical hospital	Interview by researcher	SMAST ( $\geq 5$ ) or CAGE ( $\geq 2$ )	Self-report	0.500	NR	0.213	92	92	0.522	NR
Dawson <i>et al</i> (1992) <sup>119</sup>	USA	Alcoholism	NR	General hospital	Chart review (admission or d/c note)	MAST >4	Self-report	NR	NR	0.282	78	22	0.727	0.911
Gentilelo <i>et al</i> (1999) <sup>55</sup> (Doctors)	USA	Chronic alcoholism	NR	General hospital trauma centre	Prospective questionnaire	SMAST	Self-report	0.221	38.6	0.221	462	102	0.461	0.839
Gentilelo <i>et al</i> (1999) <sup>55</sup> (Nurses)	USA	Chronic alcoholism	NR	General hospital trauma centre	Prospective questionnaire	SMAST	Self-report	0.221	38.6	0.279	462	129	0.729	0.847
Indig <i>et al</i> (2009) <sup>121</sup>	Australia	Alcohol related presentation	NR	Emergency department	Chart review	10-item AUDIT	Self-report	NR	42.2	NR	389	77	0.597	NR
Kip <i>et al</i> (2008) <sup>56</sup>	Germany	Alcohol use disorders	232 anaesthesiologists	General hospital pre-operative clinic	Chart review	10-item AUDIT	Computerised self-report	0.52	47.7	0.181	1556	282	0.174	0.954
Martin <i>et al</i> (2002) <sup>53</sup>	Germany	Alcohol use disorders	NR	General hospital pre-operative	Routine prospective questionnaire	DSM-III-R	Clinical interview	0.00	56	0.804	141	113	0.34	1.00
McCusker <i>et al</i> (1971) <sup>137</sup>	USA	Alcoholism	NR	General hospital	Chart review	Custom Alcohol Abuse Scale	Clinical interview	0.183	NR	0.475	118	56	0.554	0.984
McInnes & Powel (1994) <sup>123</sup>	Australia	Hazardous alcohol use	NR	General medical	Interview by researcher	Australian National Health and Medical Research Council guidelines	Clinical interview	0.617	NR	NR	99	99	0.333	NR
Moore <i>et al</i> (1989) <sup>125</sup>	USA	Alcohol abuse	14	Hospital: all departments	Prospective clinical judgement	13-item SMAST (> 5) and 4-item CAGE (> 2)	Self-report	0.420	49	0.225	1445	325	0.354	NR
Moore & Malitz (1986) <sup>124</sup>	USA	Alcoholic	38 (medical residents)	Internal medicine practice	Chart review	CAGE	Self-report	0.63	60	0.356	87	31	0.452	NR
Niles & McCrady (1991) <sup>126</sup>	USA	Drinking problems	NR	General hospital	Chart review	CAGE	Self-report	0.480	58.98	0.170	306	52	0.308	0.941
Rumpf <i>et al</i> (2001) <sup>138</sup>	Germany	Alcohol abuse or dependency or harmful use	NR	General medical	Interview by researcher	DSM-IV dependence or abuse (past 12 months)	Clinical interview	0.347	NR	0.227	436	99	0.889	NR

**Table DS2** Methodological and statistical summary of alcohol use disorder (continued)

	Methodological summary							Statistical summary						
	Country	Alcohol problem as defined by original investigators	Number of clinicians studied	Setting	Clinical judgement method	Gold standard	Method of ascertaining gold standard	Female proportion	Age, mean	Prevalence	Total sample size	All cases (TP+FN)	Sensitivity	Specificity
Rumpf <i>et al</i> (2001) <sup>138</sup>	Germany	Alcohol abuse or dependency or harmful use	NR	General medical	Chart review (diagnosis)	DSM-IV dependence or abuse (past 12 months)	Clinical interview	0.347	NR	0.227	436	99	0.485	NR
Seppa <i>et al</i> (2004) <sup>130</sup>	Finland	Heavy drinking	NR	Emergency department	Chart review	Five Shot Score	Self-report	NR	NR	0.268	97	26	0.462	0.944
Sherin <i>et al</i> (1982) <sup>131</sup>	USA	Alcoholism	NR	General hospital	Chart review	MAST > 3	Self-report	0.640	NR	NR	296	56	0.089	NR
Smothers <i>et al</i> (2004) <sup>134</sup>	USA	Alcohol use disorders	NR	General hospital	Chart review	AUDIT and Alcohol Use Disorders and Associated Disabilities Interview Schedule	Clinical interview	0.540	NR	NR	2040	2040	0.420	NR
Wu <i>et al</i> (2006) <sup>139</sup>	Taiwan	Alcohol use disorders	NR	General hospital	Chart review	DSM-IV alcohol use disorders	Psychiatrist administered alcohol inventory (interview)	0.442	50.8	0.253	308	78	0.141	NR
Primary care setting														
Berner <i>et al</i> (2007) <sup>111</sup>	Germany	Alcohol problems (problem drinking)	56	Primary care	Prospective questionnaire	AUDIT (>5 women; >8 men)	Self-report	0.563	NR	0.130	2562	332	0.386	0.903
Cleary <i>et al</i> (1988) <sup>114</sup>	USA	Alcoholic	19	Primary care	Prospective interview	DIS (DSM-III)	Clinical interview	0.6	NR	0.054	242	13	0.769	NR
Coulehan <i>et al</i> (1987) <sup>116</sup>	USA	Alcoholic	134	Primary care	Chart review (6 month)	DIS (DSM-III)	Clinical interview	NR	NR	0.143	294	42	0.405	NR
Creek <i>et al</i> (1982) <sup>117</sup>	USA	Alcoholic	NR	Primary care	Prospective questionnaire	MAST or SMAST (possible or probable alcoholic)	Self-report	0.6	30	0.335	182	61	0.098	NR
Leckman <i>et al</i> (1984) <sup>122</sup>	USA	Alcoholic	NR	Primary care	Chart review	MAST or CAGE	Self-report and clinical interview	0.72	40	0.163	147	24	0.500	NR
Rumpf <i>et al</i> (2001) <sup>138</sup>	Germany	Alcohol abuse or dependency or harmful use	NR	Primary care	Chart review (diagnosis)	DSM-IV dependence or abuse (past 12 months)	Clinical interview	0.62	NR	0.072	865	62	0.129	NR
Rumpf <i>et al</i> (2001) <sup>138</sup>	Germany	Alcohol abuse or dependency or harmful use	NR	Primary care	Prospective interview	DSM-IV dependence or abuse (past 12 months)	Clinical interview	0.62	NR	0.072	865	62	0.742	NR
Rydon <i>et al</i> (1992) <sup>28</sup>	Australia	Alcohol problems	8	Primary care	Prospective questionnaire	13-item SMAST	Self-report	0.56	NR	0.239	330	79	0.177	0.960
Schmidt <i>et al</i> (1995) <sup>128</sup>	USA	Alcoholic	NR	Primary care	Chart review	DSM-III-R (lifetime)	Clinical interview	0.6	43	0.212	132	28	0.179	NR
Seale <i>et al</i> (2005) <sup>129</sup>	America	Risky drinking	35	Primary care	Chart review (retrospective)	AUDIT-C ( $\geq 7$ ) women and men > 65; > 8 men < 65)	Self-report	NR	NR	0.080	3014	241	0.349	NR
Shore <i>et al</i> (2002) <sup>132</sup>	USA	Alcoholic	NR	Primary care	Chart review	3-item DIS (DSM-III)	Self-report	0.68	39	0.561	754	423	0.161	NR
Woodall (1988) <sup>135</sup>	US	Alcoholic	NR (medical residents)	Primary care	Questionnaire	SMAST or physician diagnosis	Self-report	0.8	39	0.115	218	25	0.480	NR

**Table DS2** Methodological and statistical summary of alcohol use disorder (*continued*)

	Methodological summary								Statistical summary					
	Country	Alcohol problem as defined by original investigators	Number of clinicians studied	Setting	Clinical judgement method	Gold standard	Method of ascertaining gold standard	Female proportion	Age, mean	Prevalence	Total sample size	All cases (TP+FN)	Sensitivity	Specificity
Psychiatric hospital														
Goethe & Ahmadi (1991) <sup>120</sup>	USA	Alcohol use disorder	NR	Psychiatric hospital	Clinical diagnosis	DIS	Clinical interview	NR	NR	0.346	162	56	0.214	0.594
Huang <i>et al</i> (2009) <sup>83</sup>	Taiwan	Alcoholic	NR	Psychiatric hospital	Chart review	SCID (DSM-IV)	Clinical interview	0.51	39	0.098	400	39	0.282	NR
O'Hare <i>et al</i> (2004) <sup>127</sup>	USA	Alcohol problems (problem drinking)	149	Psychiatric hospital	5-point scale from no problems to severe	AUDIT (cut-off $\geq 5$ )	Self-report	0.403	42.7	0.255	145	37	0.784	0.963
Rienzi (1992) <sup>54</sup>	USA	Alcohol dependence	16 MHP	Psychiatric community	Chart review	MAST	Self-report	0.576	37.6	NR	35	35	0.828	NR
Silver & Sporty (1990) <sup>142</sup>	USA	Alcohol problems/abuse	55 MHP	Psychiatric hospital OPD	Prospective self-report	Expert interview	Clinical interview	NR	NR	0.195	77	15	0.667	0.887

TP, true positives; FN, false positives ; NR, not reported; MAST, Michigan Alcoholism Screening Test; DIS, Diagnostic Interview Schedule; SCAN, Schedules for Clinical Assessment in Neuropsychiatry; AUDIT, The Alcohol Use Disorders Identification Test; SMAST, Short Michigan Alcoholism Screening Test; MHP, mental health practitioners; OPD, out-patient department;.

## Additional references

- 110 Adams WL, Magruder-Habib K, Trued S, Broome HL. Alcohol abuse in elderly emergency department patients. *J Am Geriatr Soc* 1992; **40**: 1236–12.
- 111 Berner MM, Harter M, Kriston L, Lohmann M, Ruf D, Lorenz G, Mundle G. Detection and management of alcohol use disorders in German primary care influenced by non-clinical factors. *Alcohol Alcohol* 2007; **42**: 308–16.
- 112 Bush B, Shaw S, Cleary P, Delbanco TL, Aronson MD. Screening for alcohol abuse using the CAGE questionnaire. *Am J Med* 1987; **82**: 231–5.
- 113 Cerise FP, Scarinci IC, Thibodaux R, Cannatella M, Stark S, Brantley PJ. Alcoholism among indigent inpatients: identification and intervention by internal medicine residents. *South Med J* 1998; **91**: 27–3.
- 114 Cleary PD, Miller M, Bush BT, Warburg MM, Delblanco TL, Aronson MD. Prevalence and recognition of alcohol abuse in a primary care population. *Am J Med* 1988; **85**: 466–71.
- 115 Conigliaro J, Lofgren RP, Hanusa BH. Screening for problem drinking: impact on physician behavior and patient drinking habits. *J Gen Intern Med* 1998; **13**: 251–6.
- 116 Coulehan JL, Zettler-Segal M, Block M, McClelland M, Schulberg HC. Recognition of alcoholism and substance abuse in primary care patients. *Arch Intern Med* 1987; **147**: 349–52.
- 117 Creek LV, Zachrich RL, Scherger WE. The use of standardized alcoholism screening tests in family practice. *Fam Pract Res J* 1982; **2**: 11–7.
- 118 Curtis JR, Geller G, Stokes EJ, Levine DM, Moore RD. Characteristics, diagnosis, and treatment of alcoholism in elderly patients. *J Am Geriatr Soc* 1989; **37**: 310–6.
- 119 Dawson NV, Dadheech G, Speroff T, Smith RL, Schubert DSP. The effect of patient gender on the prevalence and recognition of alcoholism on a general medicine inpatient service. *J Gen Intern Med* 1992; **7**: 38–45.
- 120 Goethe JW, Ahmadi KS. Comparison of diagnostic interview schedule to psychiatrist diagnoses of alcohol use disorder in psychiatric inpatients. *Am J Drug Alcohol Abuse* 1991; **17**: 1.
- 121 Indig D, Copeland J, Conigrave KM. Comparing methods of detecting alcohol-related emergency department presentations. *Emerg Med J* 2009; **26**: 596–600.
- 122 Leckman AL, Umland BE, Blay M. Prevalence of alcoholism in a family practice center. *J Fam Pract* 1984; **18**: 867–70.
- 123 McInnes E, Powel J. Drug and alcohol referrals: are elderly substance abuse diagnoses and referrals being missed. *BMJ* 1994; **308**: 444–6.
- 124 Moore RD, Malitz FE. Underdiagnosis of alcoholism by residents in an ambulatory medical practice. *J Med Educ* 1986; **61**: 46–52.
- 125 Moore RD, Bone LR, Geller G, Mamon JA, Stokes EJ, Levine DM. Prevalence, detection, and treatment of alcoholism in hospitalized patients. *JAMA* 1989; **261**: 403–7.
- 126 Niles BL, McCrady BS. Detection of alcohol problems in a hospital setting. *Addict Behav* 1991; **16**: 223–33.
- 127 O'Hare T, Sherrer MV, LaButti A, Emrick K. Validating the alcohol use disorders identification test with persons who have a serious mental illness. *Res Soc Work Pract* 2004; **14**: 36–42.
- 128 Schmidt A, Barry KL, Fleming MF. Detection of problem drinkers: the Alcohol Use Disorders Identification Test (AUDIT). *South Med J* 1995; **88**: 52–9.
- 129 Seale JP, Shellenberger S, Tillery WK, Boltri J, Vogel R, Barton B, et al. Implementing alcohol screening and intervention in a family medicine residency clinic. *Subst Abuse* 2005; **26**: 23–31.
- 130 Seppä K, Lahtinen T, Antila S, Aalto M. Alcohol drinking among emergency patients – alcometer use and documentation. *Alcohol Alcohol* 2004; **39**: 262–5.
- 131 Sherin KM, Piotrowski ZH, Panek SM, Doot MC. Screening for alcoholism in a community hospital. *J Fam Pract* 1982; **15**: 1091–5.
- 132 Shore J, Manson SM, Buchwald D. Screening for alcohol abuse among urban native Americans in a primary care setting. *Psychiatr Serv* 2002; **53**: 757–60.
- 133 Silverman DC, O'Neill SF, Cleary PD, Barwick C, Joseph R. Recognition of alcohol abuse in psychiatric outpatients and its effect on treatment. *Hosp Community Psychiatry* 1992; **43**: 644–5.
- 134 Smothers BA, Yahr HT, Ruhl CE. Detection of alcohol use disorders in general hospital admissions in the United States. *Arch Int Med* 2004; **164**: 749–56.
- 135 Woodall HE. Alcoholics remaining anonymous: resident diagnosis of alcoholism in a family practice center. *J Fam Pract* 1988; **26**: 293–8.
- 136 Chen C-H, Chen WJ, Cheng ATA. Prevalence and identification of alcohol use disorders among nonpsychiatric inpatients in one general hospital. *Gen Hosp Psychiatry* 2004; **26**: 219–25.
- 137 McCusker J, Cherubin CE, Zimberg S. Prevalence of alcoholism in general municipal hospital population. *NY State J Med* 1971; **71**: 751–4.
- 138 Rumpf HJ, Bohlmann J, Hill A, Hapke U, John U. Physicians' low detection rates of alcohol dependence or abuse: a matter of methodological shortcomings? *Gen Hosp Psychiatry* 2001; **23**: 133–7.
- 139 Wu S-I, Lui S-I, Fang C-K, Hsu C-C, Sun YW. Prevalence and detection of alcohol use disorders among general hospital inpatients in eastern Taiwan. *Gen Hosp Psychiatry* 2006; **28**: 48–54.
- 140 Bostwick JM, Seaman JS. Hospitalized patients and alcohol: who is being missed? *Gen Hosp Psychiatry* 2004; **26**: 59–62.
- 141 Mahler SA, Pattani S, Standifer J. Clinical sobriety assessment by emergency physicians in blunt trauma patients with acute alcohol exposure. *J Emerg Med* 2010; **39**: 685–90.
- 142 Silver BA, Sporty LD. Behavioural correlates and staff recognition of alcohol use in a University hospital trauma service. *Psychosomatics* 1990; **31**: 420–5.