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▶ A systematic review and meta-analysis of health care utilization outcomes in alcohol screening and brief intervention trials.

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Medical Care: 2011, 49(3), p. 287–294.

Screening for risky drinking and offering brief advice slightly reduces later emergency department visits was the main finding of this review, suggesting these programmes can help ease pressure on overloaded departments. Adding to their attraction, some of the evidence comes from studies in the services set to benefit.

SUMMARY Alcohol screening and brief intervention programmes typically ask a few questions to identify risky drinkers among patients attending for medical care unrelated to their drinking and offer brief advice intended to reduce risks to their health and other adverse consequences. The featured review was the first to systematically assess whether (presumably due to health benefits) following such interventions patients less often need to attend for medical care.

The analysts sought English-language publications reporting relevant trials, excluding those focusing on alcohol-dependent populations [Editor's note: commonly thought an inappropriate target for such brief interventions]. The 29 reports they found were published from 1962 to 2010. Of these, 21 reported studies conducted in primary care, four in emergency departments, and four in another hospital setting. All the reports were from studies in western economically advanced nations, including 17 from the USA and six from the UK. Results were analysed on the assumption that (given differences between the trials) there was no single 'true' effect of the interventions from which trial results deviated just by chance, but that different results might reflect real differences in impact. The analysts selected results from the longest follow-up point in each study, usually a year but in some studies several years.

Main findings

From trials conducted in **primary care**, 11 reports assessed the use of outpatient medical services following intervention; results were generally not statistically significant and fairly evenly split between increased and decreased use, suggesting that overall there was no appreciable impact. The picture was similar with respect to impacts on inpatient stays. However, emergency department visits were more consistently reduced – seven of 11 reports; a non-significant decrease was the typical finding, though in two US reports from the same trial the fall was significant. Reports which combined all three categories of medical care found no significant impacts.

Results from interventions tested in emergency departments and other **hospital** settings were generally inconclusive. However, the three reports which documented emergency department visits found decreases, two of which were statistically significant. In respect of interventions actually in **emergency** department, one British study found subsequent emergency visits were fewer when risky drinkers had been referred for counselling, but across these studies inpatient care and outpatient care were either unaffected or impacts were mixed. In **other hospital** settings, one trial found a statistically significant decrease in subsequent inpatient stays. Three other reports documented mixed or no effects on outpatient and emergency care.

After describing the results of the trials the analysts attempted to amalgamate them using meta-analytic techniques, but just 11 of the 19 reports provided usable data from distinct trials. With so few it was decided not to divide the trials according to the type of setting in which they were conducted. Findings from the analyses were in line with the descriptive account of the trials. Compared to control patients, across all 11 trials outpatient visits actually increased among patients allocated to a brief intervention, but this finding narrowly missed statistical significance, and the variation between trials was such that it could not be relied on as an indication of the general impact of brief interventions. Results were similar for inpatient stays. Emergency department visits fell relative to control patients and there was relatively little variation across the trials. However, this result was not statistically significant, and even if it was nevertheless real, the effect was marginal.

The authors' conclusions

Both the descriptive review and the meta-analyses suggest that alcohol screening and brief intervention in primary care and in emergency departments slightly reduce the need for later emergency department visits, but there is little or no effect on later inpatient or outpatient medical care. Because emergency care is generally very expensive, interventions in these settings may reduce overall health care cost. Interventions mounted in non-emergency hospital settings appeared to have no effect on later health care utilisation. However, there were too few studies to generate robust policy implications.

In the context of there having been no impact on inpatient stays, the small increase in outpatient care found in the meta-analysis may reflect a desired effect of brief advice – to prompt further help among drinkers whose problems are not so severe as to require admission to hospital.

FINDINGS **COMMENTARY** This analysis speaks to an important issue in brief intervention policy – whether the health services generally responsible for mounting these programmes can expect a pay-off in improved patient health which in turn relieves the load on their services. With this kind of possibility in mind, Britain's national health intervention advisory body has commended screening and brief intervention to NHS and local authorities as an essential strand in an "invest to save" strategy to prevent problem drinking. The only real hope the featured review holds out is that screening for risky drinking and offering brief advice in GPs' surgeries and in emergency departments may mean slightly fewer emergency visits in the future. Given the pressure on emergency departments in Britain, this may seem a worthwhile potential addition to any other benefits to the patients and their associates from reduced drinking. However, this hope rests mainly on two studies which did not duplicate how brief interventions would usually be implemented. Details below.

The finding in the meta-analysis that brief interventions may cut later recourse to emergency departments appears to rely largely on two US trials. Rather than attempting to approach all relevant patients in the emergency department, the first study recruited inpatients admitted for at least 24 hours to a trauma centre. The 30-minute intervention was delivered not by the hospital's medical staff but by a psychologist trained in brief interventions, and was followed up a month later by a handwritten letter. Given the nature of the injuries sustained by these patients (falls and traffic accidents accounted for about half), it seems likely that many were related to recent heavy drinking, a persuasive hook for the intervention. Nearly half the patients had previously been counselled about their drinking, further indication that this was not a usual emergency department sample. In a second study, the 'brief' intervention was unusually extensive – two advice sessions with a family doctor and two follow-up calls from a nurse – and the control intervention which it outperformed could not be considered acceptable medical care. Control patients were merely handed a general health advice booklet which would not have signalled to them that they had a drinking problem, and their doctors were not told that screening had indicated heavy drinking, depriving them of an

opportunity to address the issue during the routine medical consultation.

A third study which found reduced emergency care (in another three trials, results were in the 'wrong' direction) came from the UK. Based on their own accounts, over the following 12 months patients randomly allocated after screening to an appointment with an alcohol adviser had made slightly fewer visits to an emergency unit than those simply handed an alcohol advice leaflet and told by emergency staff that their drinking might be harmful. The difference of on average 0.90 attendances versus 0.97 per patient was statistically insignificant, and the number of times patients had needed an ambulance was virtually the same regardless of intervention. This data (which was included in the featured review) was based on fewer than half the patients in the study. However, the unit's own attendance records revealed that patients allocated to advice had returned nearly 30% fewer times than patients simply handed the leaflet – a difference which *was* statistically significant. Though not reliant on following patients up, this finding too suffered from loss of patients to the study; of those who had screened positive for risky drinking, only about half entered the trial. Notably these results reflected the impact of adding an offer of further advice (which only a minority took up) to the potentially powerful warning from unit staff, itself a (presumably very) brief intervention. Without this systematically applied warning the advantage gained by the offer of advice might have been greater.

What about injuries?

If the impact on emergency department visits is real, presumably a major mechanism is the reduction of injuries. For the evidence we can turn to a Cochrane review which investigated injury reductions after interventions targeting problem drinking. When the analysis narrowed in on brief interventions, five of the seven relevant trials were found to have recorded fewer injuries after intervention than in a control group, and in two the differences were statistically significant. Interestingly, these two trials did not find reductions in drinking; across all the studies, injury reductions often did not parallel drinking reductions and vice versa.

From emergency departments in particular there is little evidence, and findings are patchy though on balance positive. Among studies which compared brief against no intervention, one review which focused on injured patients found two studies in which injuries were further reduced by intervention, and one in which they were not. Another similar review did not confine itself to injured patients, but excluded studies where the intervention was conducted during follow-on inpatient care. Combined findings showed that six to 12 months later, interventions patients were about half as likely as comparison patients to have suffered an alcohol-related injury. The three studies on which this estimate was based were all from the USA. Two (1 2) involved only teenage patients whose drinking would have been illegal in that country. The third did recruit adults, offering a one-hour motivational interview plus for some patients a further session a week or so later, which nearly 70% attended. Only those offered (and especially those who attended) this 'booster' experienced significantly fewer injuries than control group patients who received no special intervention.

In GP-based primary care the main feature is the lack of studies. The US study referred to above which featured an unusually extensive intervention did find this was followed over the next four years by fewer traffic accidents causing death or injury compared to the record of patients offered no alcohol-focused advice by the study. Apart from this, the evidence bank seems empty. Absence of evidence is also the main feature for studies based in general hospital wards.

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