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▶ [Modeling the impact of alcohol dependence on mortality burden and the effect of available treatment interventions in the European Union.](#)

Rehm J., Shield K.D. Gmel G. et al.

European Neuropsychopharmacology: 2013, 23(2), p. 89–97.

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Simulation exercise estimates that had either the main anti-relapse medications or brief interventions on hospital wards reached 40% of the heaviest and dependent drinkers, in 2004 they would have prevented nearly 12,000 deaths across the European Union.

SUMMARY The featured analysis estimated the proportions of deaths among 15–64-year-old residents of the European Union due to drinking, [heavy](#) drinking and alcohol dependence, then how many of these deaths would be averted by if varying proportions of dependent drinkers (from 10% to 40%) were engaged in different types of treatments or brief interventions. The results give an indication of the lives which might be saved if treatment was extended to more of the dependent population. The interventions considered were: among alcohol treatment caseloads, prescribing acamprosate or opioid antagonists like naltrexone, motivational interviewing, or cognitive-behavioural therapy; and among hospital inpatients identified as heavy drinkers while being treated for other conditions, brief interventions.

Dependent drinkers entering treatment were assumed to be among the [heaviest](#) drinkers in each country. Their consumption was estimated to fall as a result of treatment by amounts indicated in major reviews of treatment evaluation research. In turn this was estimated to reduce their risk of death due or partly due to alcohol. For the year 2004, the difference between the number of deaths due to untreated drinking versus the number expected if 10% to 40% of the heaviest and dependent drinkers were treated was the basis for calculating the proportion and number of alcohol-related deaths saved by treatment.

Main findings

Across the European Union it was calculated that about 86% of adults were drinkers, 9.4% [heavy](#) drinkers, and 3.5% dependent. After taking in to account health benefits of moderate drinking on diabetes and cardiovascular disease, in 2004 1 in 7 of all deaths in men and 1 in 13 among women were estimated to have been due to drinking. Nearly 8 in 10 of these deaths were due to heavy drinking and 7 in 10 due to dependent drinking.

Deaths were calculated to be most effectively averted by prescribing acamprosate or naltrexone and by brief interventions in hospitals. Compared to treatment being unavailable, had 40% of the heaviest and dependent drinkers been treated in these ways, it was estimated that in 2004 there would have been 13% fewer alcohol-related deaths among men and 9% fewer among women. These proportions equate to about 10,000 fewer deaths among men due to either treatment, 1700 fewer among women prescribed acamprosate or naltrexone, and 1500 fewer among women who participated in brief interventions in hospitals – in total, nearly 12,000 averted deaths. If just 10% were treated the corresponding figures would fall respectively to about 2500 for men, and for women just below 420 and about 370. In the longer term the number of deaths averted would be greater.

The authors' conclusions



Key points

From summary and commentary

Study asked how many deaths would be averted in a year if the most effective lifesaving treatments reached up to 40% of the alcohol-dependent residents of the European Union.

Treatments considered were prescribing relapse-prevention medications, motivational interviewing, cognitive-behavioural therapy, and brief interventions for hospital inpatients.

Prescribing and brief interventions were calculated to save most lives. Had 40% of the heaviest and dependent drinkers been treated in these ways, in 2004 there would have been nearly 12,000 fewer deaths than if no treatment was available.

There are however reasons to doubt whether the interventions would save as many lives as the study estimated, and whether they could be scaled up to reach a high proportion of dependent drinkers.

Mainly due to dependent drinking, alcohol causes a substantial degree of premature mortality in the European Union, but over 10% these deaths could be averted in a year by increasing alcohol dependence treatment capacity and coverage to 4 in 10 of the heaviest dependent drinkers.

FINDINGS COMMENTARY A base of zero treatment access is unrealistic in the European Union; 1 in 10 dependent drinkers entering treatment would (eg [in Italy](#)) be closer to the current situation. From the figures in the featured report, it can be calculated that from a base of the most effectively lifesaving treatments reaching 10% of dependent drinkers, scaling services up to reach 40% would in 2004 have resulted in about 9000 fewer deaths across the European Union. Assuming the validity of this estimate, it remains unclear whether the resources needed to achieve this degree of scaling up might have saved more lives had they been invested in other public health, medical, social or economic interventions. Setting that issue to one side leaves the issue of the validity of the estimates for alcohol. The featured study's calculations are, the authors acknowledged, possibly based on best case scenarios unlikely to be realised outside the context of a controlled research study – and often not even then. They may best be seen as indications of the lives which would be saved *if* the tested interventions really were as effective as assumed, and *if* they could reach as many people as assumed – both rather large 'ifs'. More below

Are the interventions *that* effective?

There seem reasons to question whether both the types of interventions estimated to save most lives would do so as effectively as the featured study estimated. Details below.

Most startling was its estimate that what would generally be no more than an hour's brief intervention among patients not seeking treatment would rival the lifesaving impact of extended prescribing-based treatment (and easily better psychosocial therapies) delivered to patients actually seeking help to overcome their drink problems.

Estimates for brief interventions were based on a [prior review](#) amalgamating results from studies which had usually randomly allocated general hospital ward patients to a brief intervention versus usual care. Its finding of significantly fewer deaths in the following year among brief intervention patients mainly reflected the results of two studies conducted in [Taiwan](#) and [Germany](#). These reported deaths only to explain loss to follow up. Since deaths were not an intended outcome measure, neither study seems to have taken any special steps (such as checking official records) to establish which patients had died and which simply could not be contacted. Until this finding is confirmed in studies set up to assess impacts on deaths, it is best considered promising but tentative.

Instead of relying on the prior review's deaths figures, the featured study also calculated averted deaths based the review's estimate of how much less patients drank as a result of brief interventions. On this basis lives saved remained appreciable but much fewer. The calculations assumed that a brief intervention would over the following year reduce drinking by on average 13.5g of alcohol a day, over one and a half UK units. But the [review](#) from which this was derived found that after a year the weekly reduction was about 34g – under 5g a day, not 13.5 – and this result was unreliable because it was not statistically significant – it could not be assumed that it reflected anything more than chance fluctuations in the patients' drinking.

Calculations of deaths averted by prescribing-based treatments were based on two reviews dealing with [acamprosate](#) and (mainly) [naltrexone](#). The featured study assumed that all the reductions in drinking seen among patients prescribed these drugs was due to the treatments – that no reductions would have occurred had the patients not entered treatment. Yet [US surveys](#) have found that three-quarters of dependent drinkers remit without treatment, and in the acamprosate review virtually the same proportion of patients returned to heavy drinking after being prescribed an inactive placebo as after being prescribed acamprosate. Though statistically significant, the differences found by the naltrexone review were small – an extra 3% reduction in the number of days on which patients drank heavily and an 11g reduction in the amount drunk on each drinking day. These findings raise questions over the degree to which the treatments were responsible for all the gains made by the patients, or whether some of these would have happened anyway.

Can 40% of dependent drinkers be reached?

Acknowledged by the featured study's authors is the question of whether it is feasible to engage 40% of all heavy and dependent drinkers in the European Union in the interventions it assessed. Brief interventions [typically reach](#) only a small proportion of the intended recipients, and [in England](#) at least, in 2013–14 just 16% of adult patients at specialist alcohol services had received prescribing-based treatments. Reaching 15% of drinkers in need of treatment is considered a good proportion for Western developed nations.

Last revised 28 July 2015. First uploaded 24 July 2015

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