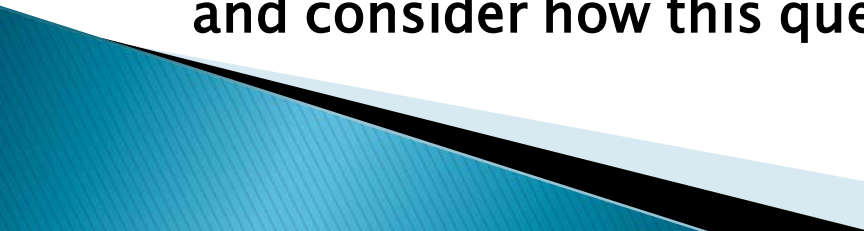


**CAN WIDESPREAD SCREENING AND BRIEF
INTERVENTION LEAD TO POPULATION-LEVEL
REDUCTIONS IN ALCOHOL-RELATED HARM?**

**Nick Heather PhD,
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President, INEBRIA**

TO BE COVERED

- ▶ Trace the history of claims for the public health benefits of screening and brief intervention (SBI)
 - ▶ Look at recent evidence on attempts to achieve widespread implementation of SBI and their consequences
 - ▶ Contribute to INEBRIA's 4th Objective: 'To promote the integration of the study of brief interventions with the wider context of measures to prevent and reduce alcohol-related harm'
 - ▶ Specifically, consider the relationship between SBI and preventive control measures in the effort to reduce alcohol-related harm
 - ▶ Overall, ask whether widespread implementation of SBI can lead to population-wide reductions in consumption and harm and consider how this question could be answered
- 

TWO JUSTIFICATIONS FOR BRIEF INTERVENTION

▶ Clinical justification

- In the interests of the individual patient/client
- Early intervention/secondary prevention but also reduction of current problems
- NNT = 10 (in general practice)
- Even if no immediate change, may start a process of affective/cognitive then behavioural change (eg, according to Transtheoretical Model)

▶ Public health justification

- In the interests of reducing the aggregate of alcohol problems in society at large, ie, leads to population-wide reductions in alcohol consumption and problems
- With population-wide improvements to physical and mental health
- And highly cost-effective way of doing so

CLAIMS FOR PUBLIC HEALTH BENEFIT OF ALCOHOL BI: PROTOTYPE STUDY SMOKING CESSATION AREA (1)

- ▶ Russell, M. A. H., Wilson, C., Taylor, C., & Baker, C. (1979). Effect of general practitioners' advice against smoking. *British Medical Journal*, 283, 231–234.
- ▶ 2138 smokers attending 28 GP surgeries in London allocated to 1 of 4 groups:
 - Non-intervention controls – 1 year quit rate = 0.3%
 - Questionnaire-only controls = 1.6%
 - Advised by GP to stop smoking = 3.3%
 - Advised, leaflet and warned of follow-up = 5.1%

CLAIMS FOR PUBLIC HEALTH BENEFIT OF ALCOHOL BI: PROTOTYPE SMOKING STUDY (2)

- ▶ “The results suggest that any GP who adopts this simple routine could expect about 25 long-term successes yearly. If all GPs in the UK participated the yield would exceed half a million ex-smokers a year. This target could not be matched by increasing the present 50 or so special withdrawal clinics to 10,000.”
 - (Russell et al., 1979, p.231)

CLAIMS FOR PUBLIC HEALTH BENEFIT OF ALCOHOL BI: FIRST GOOD EVIDENCE OF EFFECTIVENESS (1)

- ▶ Wallace, P., Cutler, S., & Haines, A. (1988). Randomized controlled trial of general practitioner intervention with excessive alcohol consumption. *British Medical Journal*, 297, 663–668.
- ▶ 909 patients from 47 group practices throughout UK who were drinking above limits randomised to:
 - Advice and information about reducing consumption + leaflet (up to 5 sessions at discretion of GP)
 - Non-intervention controls
- ▶ At one year, proportion with excessive consumption dropped by 43.7% in BI group compared with 25.5% in controls ($p < 0.001$)

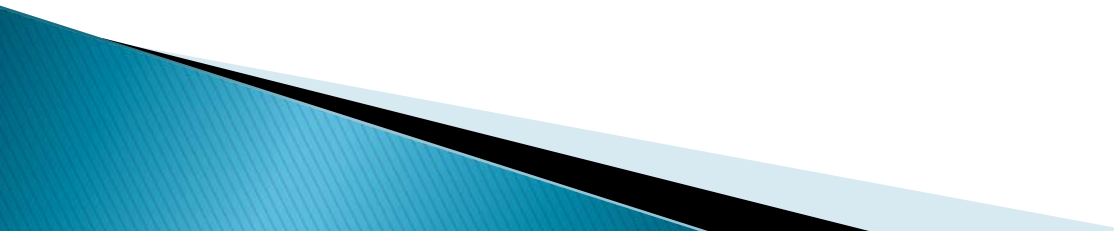
CLAIMS FOR PUBLIC HEALTH BENEFIT OF ALCOHOL BI: FIRST GOOD EVIDENCE OF EFFECTIVENESS (2)

- ▶ “If the results of this study were applied to the UK, intervention by GPs could each year reduce to moderate levels the alcohol consumption of some 250,000 men and 67,500 women who currently drink to excess. General practitioners and other members of the primary health care team should therefore be encouraged to include counselling about alcohol consumption in their preventive activities.”
 - Wallace *et al.* (1988, p.663)

PUBLIC HEALTH BENEFIT PRESUPPOSES WIDESPREAD SCREENING (1): UNIVERSAL VS TARGETED

- ▶ If a population-wide benefit of BI is possible, it must presumably be based on widespread screening, to include nearly the whole population
- ▶ D&A Findings – Hot Topic
- ▶ Recent policy in England (eg, Department of Health) favours *targeted* over *universal* screening in general practice and other medical settings. GPs directed to offer an alcohol screen to all new registrations (Direct Enhanced Service [DES] commissioned through Primary Care Contract) + the option of targeting other at-risk groups, eg, all men aged 35–54
- ▶ In Scotland HEAT H4 target based on SIGN 74 Guideline – clinical presentation and new registrations – not universal screening
- ▶ Recent NICE guidance recommends that NHS professionals should carry out alcohol screening as an integral part of primary care and, where this is not feasible, should focus on those at increased risk of harm from alcohol or those with alcohol-related conditions.
- ▶ Appeal to targeted screening is partly to make implementation more feasible and acceptable but also because of resistance to universal screening from some medical quarters (eg, article by Beich et al [2003] in BMJ)

PUBLIC HEALTH BENEFIT PRESUPPOSES WIDESPREAD SCREENING (2)

- ▶ Widespread screening in VA system in USA
 - ▶ Findings on SBIRT at this conference
 - ▶ Findings from population-wide survey of GP enquiry about alcohol following Risk Drinking Project in Sweden
- 

Article

Receiving an Alcohol Enquiry from a Physician in Routine Health Care in Sweden: A Population-Based Study of Gender Differences and Predictors

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ENGDAHL & NILSEN (2011)

- ▶ Telephone-administered questionnaire with approx 72,000 representative sample of Swedish-speaking general population between 2006–09
- ▶ ‘Alcohol enquiry’ defined as having been asked about one’s drinking by a physician in any health care visit in last 12 months
- ▶ 14% had received an alcohol enquiry but considerable gender differences
- ▶ Hazardous drinkers: 13% women; 17% men
- ▶ ‘Sensible’ drinkers: 10% women; 15% men

PUBLIC HEALTH BENEFIT PRESUPPOSES WIDESPREAD SCREENING (3): MASS SCREENING PROGRAMME

- ▶ But universal screening in a practice different again from a formal, national, mass screening programme, such as for breast or cervical cancer among women, congenital heart disease among newborn, bowel cancer among all adults
- ▶ An appraisal of the suitability of alcohol screening for a mass screening programme recently commissioned from *Solutions for Public Health* by the *National Screening Committee*
- ▶ A formal screening programme for alcohol was not recommended – see <http://www.screening.nhs.uk/alcohol>

NSC CRITERIA FOR FORMAL SCREENING PROGRAMME

- ▶ 1) The condition should be an important health problem ✓
- ▶ 2) The epidemiology and natural history of the condition, including development from latent to declared disease, should be adequately understood and there should be a detectable risk factor, disease marker, latent period or early symptomatic stage ✓
- ▶ 3) All the cost-effective primary prevention interventions should have been implemented as far as practicable ?

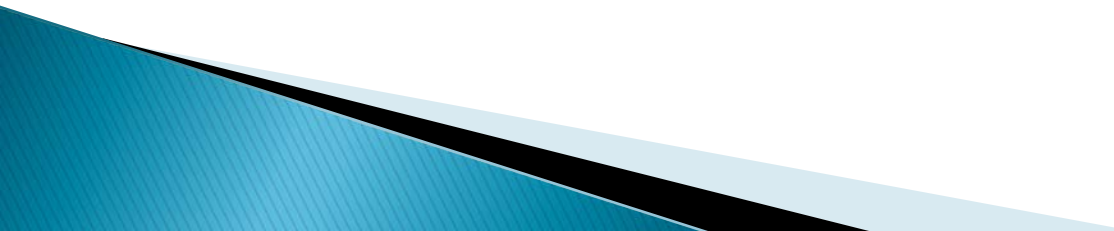
NSC CRITERIA FOR FORMAL SCREENING PROGRAMME cont...

- ▶ 4) There should be a simple, safe, precise and validated screening test **X**
- ▶ 5) The distribution of the test values in the target population should be known and a suitable cut-off level defined and agreed **?**
- ▶ 6) The test should be acceptable to the population **?**
- ▶ 7) There should be an agreed policy on the further diagnostic investigation of individuals with a positive test result and on the choices available to those individuals **✓**

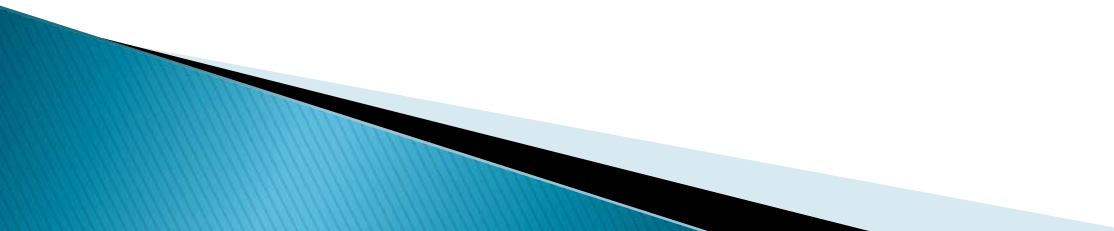
NSC CRITERIA FOR FORMAL SCREENING PROGRAMME cont...

- ▶ 8) There should be an effective treatment or intervention for patients identified through early detection, with evidence of early treatment leading to better outcomes than late treatment ✓
- ▶ 9) There should be agreed evidence-based policies covering which individuals should be offered treatment and the appropriate treatment to be offered ✓
- ▶ 10) Clinical management of the condition prior to participation in a screening programme and patient outcomes should be optimised in all health care providers ?
- ▶ 11) There should be evidence from high quality randomised controlled trials that the screening programme is effective in reducing mortality or morbidity X

BUT DO WE WANT A NATIONAL MASS SCREENING PROGRAMME ANYWAY?

- ▶ **Probably not – too intrusive and unpopular with health professionals**
 - ▶ **Also rejected by the NSC: Alzheimer's disease and depression**
 - ▶ **But perhaps we can learn from the reasons for being rejected**
- 

PUBLIC HEALTH BENEFIT PRESUPPOSES WIDESPREAD IMPLEMENTATION OF BRIEF INTERVENTION (1)

- ▶ As well as widespread screening, the public health benefit of SBI presupposes widespread delivery of brief intervention to those screening positive
 - ▶ Evidence on this from Sweden and Finland
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Brief interventions in routine health care: a population-based study of conversations about alcohol in Sweden

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ABSTRACT

Aims To investigate how brief alcohol interventions are delivered in routine practice in the Swedish health-care system. **Design, setting and participants** A cross-sectional sample of 6000 individuals representative of the adult population aged 18–64 years registered in the Swedish total population register was drawn randomly. Data were collected in 2010 by means of a mail questionnaire. The response rate was 54%. **Measurements** The questionnaire consisted of 27 questions, of which 15 variables were extracted for use in this study. Whether alcohol had been discussed and the duration, contents, experiences and effects of any conversations about alcohol, as reported by patients themselves, were assessed. **Findings** Sixty-six per cent of the respondents had visited health-care services in the past 12 months and 20% of these had had one or more conversations about alcohol during these visits (13% of the population aged 18–64 years). The duration of the conversations was generally brief, with 94% taking less than 5 minutes, and were not experienced as problematic. The duration, contents, experiences and effects of these conversations generally varied between abstainers, moderate, hazardous and excessive drinkers. Twelve per cent of those having a conversation about alcohol reported that it led to reduced alcohol consumption. Reduced alcohol consumption was more likely when conversations lasted for 1–10 minutes rather than less than 1 minute and included advice on how to reduce consumption. **Conclusions** Population survey data in Sweden suggest that when health-care professionals give brief advice to reduce alcohol consumption, greater effects are observed when the advice is longer and includes advice on how to achieve it.

Alcohol-related discussions in health care— a population view

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ABSTRACT

Aims The present study aimed to evaluate the frequency and the target group of alcohol screening and brief interventions in health-care settings and how well this level of activity reflects public opinion. **Design** A general population survey. **Setting and participants** A random sample of Finns aged 15–69 years with a 74% response rate ($n = 2725$). **Measurements** Frequency counts were used to evaluate the level of activity. Logistic regression models were used to examine which groups were asked and advised about alcohol use and which groups considered it useful. **Findings** More than 90% had positive attitudes towards being asked about their alcohol use. Of those who had been in contact with health care ($n = 2062$) in the 12 months before the survey, 33.3% had been asked about their alcohol use, being most often men, young, heavy drinkers and those of high socio-economic status. Thirty-seven per cent of those who had been asked were given advice, being most often heavy drinkers and those with a normal body mass index. However, 50% of heavy drinkers who had been asked about their alcohol use had not been advised about it. Of those who had been advised, 71.9% considered it useful, especially older subjects, and also including heavy episodic drinkers, although less than others. **Conclusions** In Finland, the frequency of health-care professionals asking and giving advice on alcohol is relatively low. However, public opinion towards these discussions is positive. Our results encourage the support and uptake of systematic screenings and brief interventions in health-care settings.

WOULD WIDESPREAD IMPLEMENTATION OF BI LEAD TO POPULATION-WIDE BENEFITS?

- ▶ This question has been asked of ‘treatment’ for alcohol problems:
 - Romelsjö, A. (1987). Decline in alcohol-related in-patient care and mortality in Stockholm. *British Journal of Addiction*, 82, 653–663.
 - Mann, R., Smart, R. G., Anglin, L., & Rush, B. (1988). Are decreases in liver cirrhosis rates a result of increased treatment for alcoholism? *British Journal of Addiction*, 83, 683–688.
 - Holder, H., & Parker, R. (1992). Effect of alcoholism treatment on cirrhosis mortality: a 20-year multivariate time series analysis. *British Journal of Addiction*, 87, 1263–1274.
 - Smart, R. G., & E., M. R. (2000). The impact of programs for high-risk drinkers on population levels of alcohol problems. *Addiction*, 95, 37–52.
 - Mann, R., Smart, R., Rush, B. R., Zalcman, R., & Suurvali, H. (2005). Cirrhosis mortality in Ontario: effects of alcohol consumption and Alcoholics Anonymous participation. *Addiction*, 1669–1679.

- ▶ All these studies make claims for the contribution of treatment or AA membership to reducing alcohol problems in the population but the problems in interpreting this evidence are obvious from the correlational nature of the designs.

- ▶ No similar studies have been carried out for SBI but presumably could be.

MODELLING OF SBI EFFECTS (1)

- ▶ Purhouse, R., Brennan, A., Latimer, N. et al. (2009). *Modelling to assess the effectiveness and cost-effectiveness of public health-related strategies and interventions to reduce alcohol attributable harm in England using the Sheffield Alcohol Policy Model version 2.0*. Report to the NICE Public Health Programme Development Group. University of Sheffield.

MODELLING OF SBI EFFECTS (2)

- ▶ **Model involves:**
 - Integrating routine data on registrations and attendances in general practice and A&E, cost information, data linking scores on the AUDIT screening instrument to baseline consumption levels and published research evidence on the effectiveness of brief interventions
 - Estimating a set of possible policies implemented over an assumed ten year screening programme, quantifying the costs of implementation, the effects on 47 health conditions which are summarised using a QALY gained framework, and savings in healthcare costs
 - Crime and workplace harms excluded
 - Cost-effectiveness ratios estimated in terms of healthcare costs per QALY gained, similar to a NICE technology appraisal

MODELLING OF BI EFFECTS (3)

- ▶ Three general scenarios examined:
 - Screening at next GP registration (when patients move GP)
 - Screening at next primary care appointment
 - Screening in an emergency care setting (ie, A&E)
- ▶ All screening opportunistic (considering time to next attendance)
- ▶ Primary care scenarios applied to all English population aged 11+, A&E scenario restricted to persons 18+
- ▶ Arrival profile estimated for which a proportion of each population subgroup attends in the 1st year of the screening programme
- ▶ Repeat screening at subsequent attendance assumed not to occur
- ▶ NB Alternative scenarios not ranked in terms of cost-effectiveness (because other factors, especially implementation issues, will be important for decision-making)
- ▶ No analysis of both GP-based and A&E based SBI policies at same time

NEXT GP REGISTRATION: BASELINE SCENARIOS

- ▶ Practice nurse undertakes both screening and, where appropriate, BI
 - Screening using full AUDIT, followed by 25 minute intervention
 - Screening using AUDIT-C, followed by 5 minutes intervention (similar to DES configuration)
 - Screening using FAST, followed by 5 minutes intervention

NEXT GP REGISTRATION: RESULTS

- ▶ In all 3 cases, estimated costs of delivering SBI outweighed by financial savings due to subsequent reduced burden of illness
- ▶ Also QALY gains and therefore baseline interventions estimated to dominate 'doing nothing'
- ▶ Screening on next registration estimated to apply to 39% of population of England over 10-year period, with one third of hazardous and harmful drinkers being screened, detected and given BI

NEXT GP CONSULTATION: BASELINE SCENARIOS

- ▶ GP undertakes both screening and, where indicated, BI as part of consultation
 - Screening using full AUDIT, followed by 25 minute intervention
 - Screening using AUDIT-C, followed by 5 minute intervention (similar to DES configuration)
 - Screening using FAST, followed by 5 minute intervention

NEXT GP CONSULTATION: RESULTS

- ▶ For 25 min BI, estimated costs outweigh healthcare costs avoided, with net cost overall and ICER of £5,900 per QALY gained (ie, cost-effective)
- ▶ For 5 min BI, intervention costs lower and cost-effectiveness ratios improved
- ▶ Different from next GP registration because
 - GP staff costs higher than those of Practice Nurse
 - Males consult less frequently than females
 - Patients consult GP much more frequently than they change GP
- ▶ Thus, 96% of population screened over 10 years (the majority in the 1st year), with 70–79% hazardous/harmful drinkers receiving BI
- ▶ Estimated gain is over 100,000 QALYs over 10-year screening programme

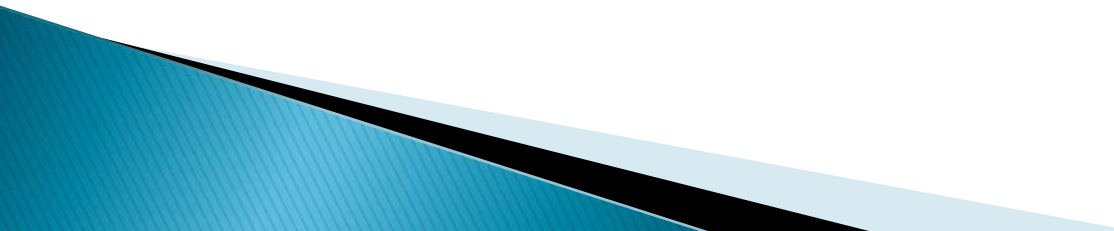
ASSUMPTIONS UNDERLYING THE MODELLING APPROACH

- ▶ Many!
- ▶ Core assumptions relate to: i) screening arrival profile; ii) diagnostic properties of screening instruments; iii) effectiveness of BI; iv) resource requirements for BI (both time and materials)
- ▶ All patients attending GP in 10-year period are screened (but only once)
- ▶ All screening positive are offered BI (but only once)
- ▶ All offered BI accept (as implicit part of consultation)
- ▶ Mean consumption in future years adjusted using 'rebound to baseline' assumption of 7 years (based on Fleming *et al.* data)
- ▶ Impacts on morbidity and mortality estimated by consumption-to-harms model
- ▶ Relationship between consumption and screening score based on (limited) survey data
- ▶ Effects of BI of different lengths estimated from Cochrane meta-analysis
- ▶ Booster sessions excluded
- ▶ No variations in BI effectiveness between different staff groups

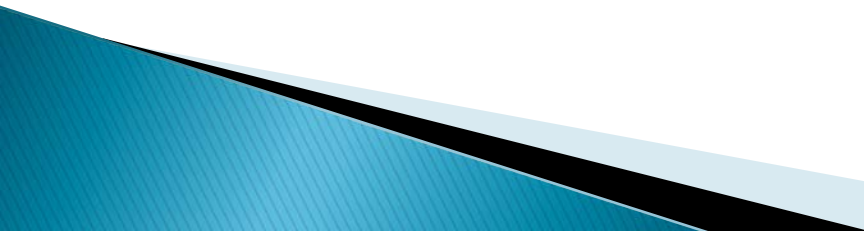
EMPIRICAL EVIDENCE IS BETTER!

- ▶ **Correlational studies** (already mentioned)
- ▶ **Natural experiments**
- ▶ **Quasi-experimental designs**
 - Using community-wide measures of alcohol-related harm, compare area(s) where BI intensively implemented over extended period with matched control area(s)
 - But formidable difficulties in, eg, controlling BI activity in experimental and control groups, matching areas on possible confounding variables
- ▶ **Cluster RCTs** but with community-wide measures as outcomes, not individual patient data

NECESSARY ASSUMPTIONS FOR A POPULATION-WIDE EFFECT OF SBI

- ▶ 1) All, or nearly all, hazardous and harmful drinkers are screened for excessive drinking and offered a BI
 - ▶ 2) BI reduces consumption in some of those who receive it (around 10% on present data)
 - ▶ 3) Reductions in consumption resulting from BI are relatively long-lasting
 - ▶ 4) There is a dose-response relationship between alcohol consumption and harm, ie, reductions in consumption lead to reductions in harm
 - ▶ 5) Therefore widespread implementation of SBI in the population will lead to reduction in alcohol-related harm
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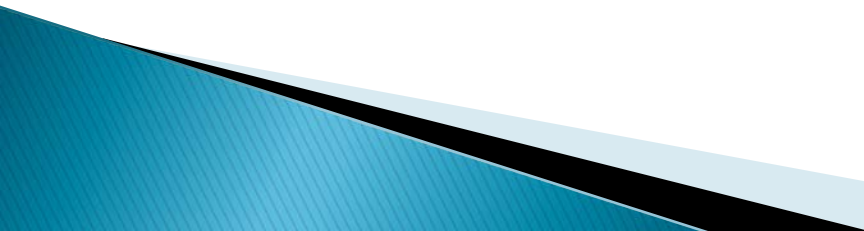
ABI AND ALCOHOL CONTROL MEASURES

- ▶ Control measures here refer to controls on price, availability and marketing of alcoholic beverages
 - ▶ Part of whole population approach to reducing alcohol-related harm, ie, attempt is made to reduce *per capita* consumption
 - ▶ Good evidence that these measures are the most effective available for reducing alcohol-related harm (Babor *et al.* [2010] 'Alcohol: No Ordinary Commodity')
 - ▶ Widespread BI not inconsistent with whole population approach
 - ▶ Both 'targeted' and whole population measures needed
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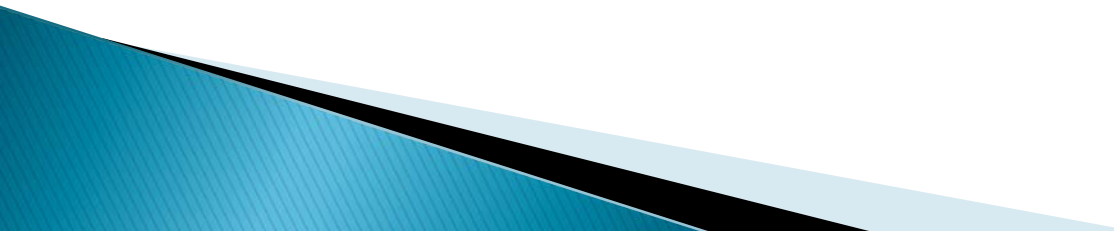
WIDESPREAD ABI WITHOUT CONTROL MEASURES

- ▶ If governments continue to refuse to implement price increases and other control measures, widespread ABI has been claimed to be the next best policy for reducing alcohol-related harm
- ▶ As well as direct effect on consumption and alcohol problems, BI could have indirect effects at community or population levels:
 - raise public awareness of alcohol-related harm
 - influence national or community agendas
 - involve health professionals in advocacy for prevention
 - provide secondary benefits to families, employers, etc.
- ▶ Also, reverse 'boule de neige' effect – see Skog (1985) 'The collectivity of drinking cultures'.
- ▶ Widespread ABI could lead to a change in the climate of opinion (ie, a 'denormalisation' of excessive drinking) in which control measures are seen as more acceptable
- ▶ But, would all this lead to a substantial reduction in harm?

WIDESPREAD SBI WITH CONTROL MEASURES

- ▶ But even if control measures were introduced, widespread BI and control measures would have reciprocal benefits
 - ▶ Changes in drinking hard to sustain in an environment that encourages heavy drinking (ie, cheap booze, easy availability, seductive advertising)
 - ▶ So effective control measures might increase success rates of BI and/or prolong reductions in drinking
 - ▶ Conversely, availability of SBI could assist those who are considering cutting down on drinking because of the effects of control measures
- 

CONCLUSIONS: MORE RESEARCH NEEDED!

- ▶ **More evidence needed on effects of SBI directly on morbidity and mortality**
 - ▶ **Evidence of longer-term effects of SBI urgently needed**
 - ▶ **More experimental investigations (natural experiments, quasi-experiments, cluster RCTs) of population- or community-wide effects of widespread implementation of SBI**
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CONCLUSIONS

- ▶ Whatever the conclusion reached regarding the potential population-wide effects of BI, benefits from a clinical perspective would continue to justify implementation
- ▶ Widespread implementation of SBI on its own, without effective control measures, could contribute to reducing alcohol-related harm on a population level but only if the majority of hazardous and harmful drinkers in the population are screened and offered BI
- ▶ At current levels of implementation, even in countries where this is most advanced, SBI on its own is unlikely to lead to significant public health benefits
- ▶ If and when effective control measures (on price, availability, marketing) were introduced, widespread SBI would play an important reciprocal role in reducing alcohol-related harm