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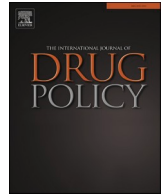
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Research Paper



## Reducing alcohol harms whilst minimising impact on hospitality businesses: ‘Sweetspot’ policy options

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## ABSTRACT

**Background:** During COVID-19, hospitality businesses (e.g. bars, restaurants) were closed/restricted whilst off-sales of alcohol increased, with health consequences. Post-covid, governments face lobbying to support such businesses, but many health services remain under pressure. We appraised ‘sweetspot’ policy options: those with potential to benefit public services and health, whilst avoiding or minimising negative impact on the hospitality sector.

**Methods:** We conducted rapid non-systematic evidence reviews using index papers, citation searches and team knowledge to summarise the literature relating to four possible ‘sweetspot’ policy areas: pricing interventions (9 systematic reviews (SR); 14 papers/reports); regulation of online sales (1 SR; 1 paper); place-shaping (2 SRs; 18 papers/reports); and violence reduction initiatives (9 SRs; 24 papers/reports); and led two expert workshops ( $n = 11$ ).

**Results:** Interventions that raise the price of cheaper shop-bought alcohol appear promising as ‘sweetspot’ policies; any impact on hospitality is likely small and potentially positive. Restrictions on online sales such as speed or timing of delivery may reduce harm and diversion of consumption from on-trade to home settings. Place-shaping is not well-supported by evidence and experts were sceptical. Reduced late-night trading hours likely reduce violence; evidence of impact on hospitality is scant. Other violence reduction initiatives may modestly reduce harms whilst supporting hospitality, but require resources to deliver multiple measures simultaneously in partnership.

**Conclusions:** Available evidence and expert views point to regulation of pricing and online sales as having greatest potential as ‘sweetspot’ alcohol policies, reducing alcohol harm whilst minimising negative impact on hospitality businesses.

## Introduction

During the COVID-19 pandemic, hospitality businesses in many

countries were subject to closures, curfews and other restrictions to reduce COVID-19 transmission (Bonar et al., 2021; Ramuni, 2021; Ryerson et al., 2021; Zysset et al., 2022). Conversely, businesses selling

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alcohol for home consumption often benefitted from trading throughout the pandemic, or were designated as essential services (Reynolds & Wilkinson, 2020a; Stockwell et al., 2020). Online alcohol purchasing was generally increasing prior to COVID-19 and alcohol industry actors likely used the changing social and economic context of the pandemic to drive strategic changes in product marketing, promotion and distribution (Collin et al., 2020).

Pandemic-related restrictions had implications for where, when, and how much alcohol was consumed: a meta-analysis of 128 studies from 58 countries found 23 % of participants reported increases in alcohol consumption during the pandemic and 23 % reported decreases (Acuff et al., 2021). A European review found that consumption increased among people with pre-existing high drinking levels (Kilian et al., 2022). This pattern was reflected in the UK (Angus, 2020; Jackson et al., 2021; Oldham et al., 2021), and likely explains “stark trends” in increased alcoholic liver deaths since the start of the pandemic (Burton et al., 2021). These patterns are very likely to exacerbate inequalities (Angus et al., 2022). In the UK, the hospitality sector was a focus of discussions on recovery from the acute phase of the pandemic (Department for Business, 2021) and the sector has been further challenged by the 2022/23 cost of living crisis. Meanwhile, alcohol continues to pose a large burden on health services worldwide (Fitzgerald et al., 2022; Manca et al., 2021; Stockwell et al., 2021). In England, COVID-19 appears to have accelerated pre-pandemic increases in alcohol-related hospital admissions (Burton et al., 2021; NHS, 2022).

Policies that reduce population alcohol consumption often offer a way to generate government revenues and support health services (Stockwell et al., 2021), but may also be judged in the context of government desire to support the hospitality sector, sometimes under intense business lobbying. For example, recent reforms of the UK alcohol duty system have attracted attention from competing campaign groups. In setting alcohol policy going forward, there are inevitable trade-offs to be made (Fitzgerald et al., 2022; The Centre for International Economics, 2021) and there may be therefore be interest in ‘sweet-spot’ policy options which can protect public health and health services whilst minimising harm to on-trade premises. Whilst the need for stronger alcohol controls to protect public health has been highlighted (Stockwell et al., 2020; Sugarman & Greenfield, 2020), consideration of any differential impact of regulation on- and off-trade premises is important and timely, having perhaps been neglected in the past (Reynolds & Wilkinson, 2020a).

In this paper, we consider this balance focused on interventions relevant to the night-time economy (NTE). Alcohol consumption and harms in the NTE arise in a system in which many consumers move between domestic or public settings, consuming both off-trade alcohol and (generally more expensive) on-trade alcohol. Alcohol tends to be sold much more cheaply in off-trade outlets. Pre-drinking alcohol in domestic settings prior to attending on-trade premises (Foster & Ferguson, 2014) is common amongst young adults (Ferris et al., 2019), generally enabling greater alcohol consumption than on-trade drinking alone. Pre-drinkers also tend to consume more alcohol in on-trade premises than non-pre-drinkers (Wells et al., 2015), to be more intoxicated and more at risk of harm (Foster & Ferguson, 2014; Santos et al., 2022) including physical aggression (Miller, Droste et al., 2012). The consumption of off-trade alcohol whilst in (‘side-loading’) (Cameron et al., 2021) or after leaving (Graham, 2012) the NTE are not well-examined in terms of contribution to harms. Alcohol policymakers may be mindful of the interaction between on- and off-trade drinking on both intoxication/short-term harms as well as longer-term health risks arising from overall consumption. Some harms (e.g. cancer) occur in direct proportion to the volume of alcohol consumed regardless of drinking location or timing, whereas others such as violence, accidents and anti-social behaviour are more sensitive to context, speed and volume of consumption (Department of Health, 2016b, 2016a; Stockwell et al., 2012).

Here, we seek to inform ongoing debates in the UK and other high

income countries that have ‘wet’ drinking cultures, about how to support hospitality businesses, debates which often exclude public health perspectives (Department for Business, 2021; Department of Tourism, Culture, Arts, Gaeltacht, 2021). We aim to describe and appraise potential ‘sweet-spot’ policy options which could benefit public services and health, whilst avoiding or minimising harm to the on-trade hospitality sector.

## Methods

### Policy areas in scope

Based on knowledge of the existing literature and emerging policy issues, four possible sweet-spot policy areas were identified:

- Structured pricing interventions including minimum pricing and alcohol taxation (Boniface et al., 2017; Elder et al., 2010; Martineau et al., 2013b);
- Regulation of online sales: including emerging remote off-sales via delivery services (Colbert et al., 2021; Reynolds & Wilkinson, 2020a);
- Place shaping: prioritising licensing of venues with less of a focus on alcohol consumption (Egan et al., 2016; Nicholls, 2015; Thompson et al., 2018);
- Violence reduction interventions in or around NTE premises including changes in serving or closing times (Graham & Homel, 2008; Jones et al., 2011; Martineau et al., 2013a; Miller et al., 2012; Quigg et al., 2018).

Within each of these areas, we considered specific policy options examined in Anglophone high income countries (HIC), with the potential to be considered ‘sweet-spot’ policies. We defined ‘sweet-spot’ policies as having the potential to reduce net alcohol consumption primarily or wholly through reducing off-trade alcohol purchases; and/or to reduce alcohol-related harm associated with the NTE; whilst avoiding harm to on-trade businesses. Regulation of alcohol marketing (e.g., advertising, sponsorship or labelling) could also conceivably meet this definition but was beyond our focus on the post-COVID-19 period and NTE.

Evidence on the four policy areas was non-systematically reviewed and summarised separately by NF, RO, IU and JGM with input from all co-authors drawing on snowball review techniques (Wohlin, 2014). Starting with the literature cited for the policy areas above, we used Google scholar, citation searches and team input to identify further evidence of an intervention’s potential to fulfil the ‘sweet-spot’ definition. Systematic reviews were prioritised over primary studies, but the latter sought where there were no reviews, few studies, or a particularly relevant study was identified. Evidence from high income Anglophone countries was prioritised, but studies from other countries were drawn on where considered relevant by experts. Co-authors added papers known to them as relevant to the research questions throughout the writing phase. Analysis focused on summarising evidence for each intervention in reducing alcohol consumption or harm, and any reported differential impact on- and off-trade premises.

### Expert workshops

We held two expert workshops with internationally-recognised academics with knowledge of one or more of the policy areas in HIC. Ethical approval was secured from the University of Stirling NHS, Invasive or Clinical Research (NICR) Ethics Committee [NICR 2021 05471545]. *Sample:* 13 academics with relevant expertise (identified from their publication or presentation records) were invited by email to take part. Eleven accepted, one suggested a substitute who was invited and also accepted, and one was uncontactable due to retirement. Of the twelve contacted, all but one participated. After the workshop, all

attendees were invited to co-author this paper: ZQ, CW, JR, KH, EMG, PM, TS and KG chose to do so. Participants were based in the UK (7), Canada (2) and Australia (2). *Recruitment:* Invitees received a participant information sheet, consent form and summary of the workshop and advance written consent was obtained. *Data Collection:* Workshops took 90 min and were facilitated online on Zoom or Microsoft Teams using a semi-structured topic guide. Each policy area was discussed, considering in turn: design of an optimal ‘sweetspot’ policy; relevant evidence, policy targets or beneficiaries, and risks or unintended consequences. Workshops were recorded and professionally transcribed, including the ‘chat’ function. *Data Analysis:* Transcripts were anonymised, then analysed thematically and inductively for each policy area by NF, JGM and RO. Summaries including illustrative quotations were shared with the co-author team who had the opportunity to provide further detail or clarification.

**Results**

Fig. 1 provides details of the papers reported in this study including the intervention covered by the paper, and the source of the paper, whether found through citation searches or added by the team. Full details of all cited papers including an extracted summary of findings from each are included in a supplementary file.

*Pricing*

*Pricing evidence*

Interventions to raise the price of alcohol including alcohol duty and minimum alcohol prices are strongly supported by evidence from multiple systematic reviews examining their effectiveness in reducing population-level alcohol consumption (Fogarty, 2010; Gallet & Gallet, 2007; Guindon et al., 2022; Wagenaar et al., 2009) and related harms

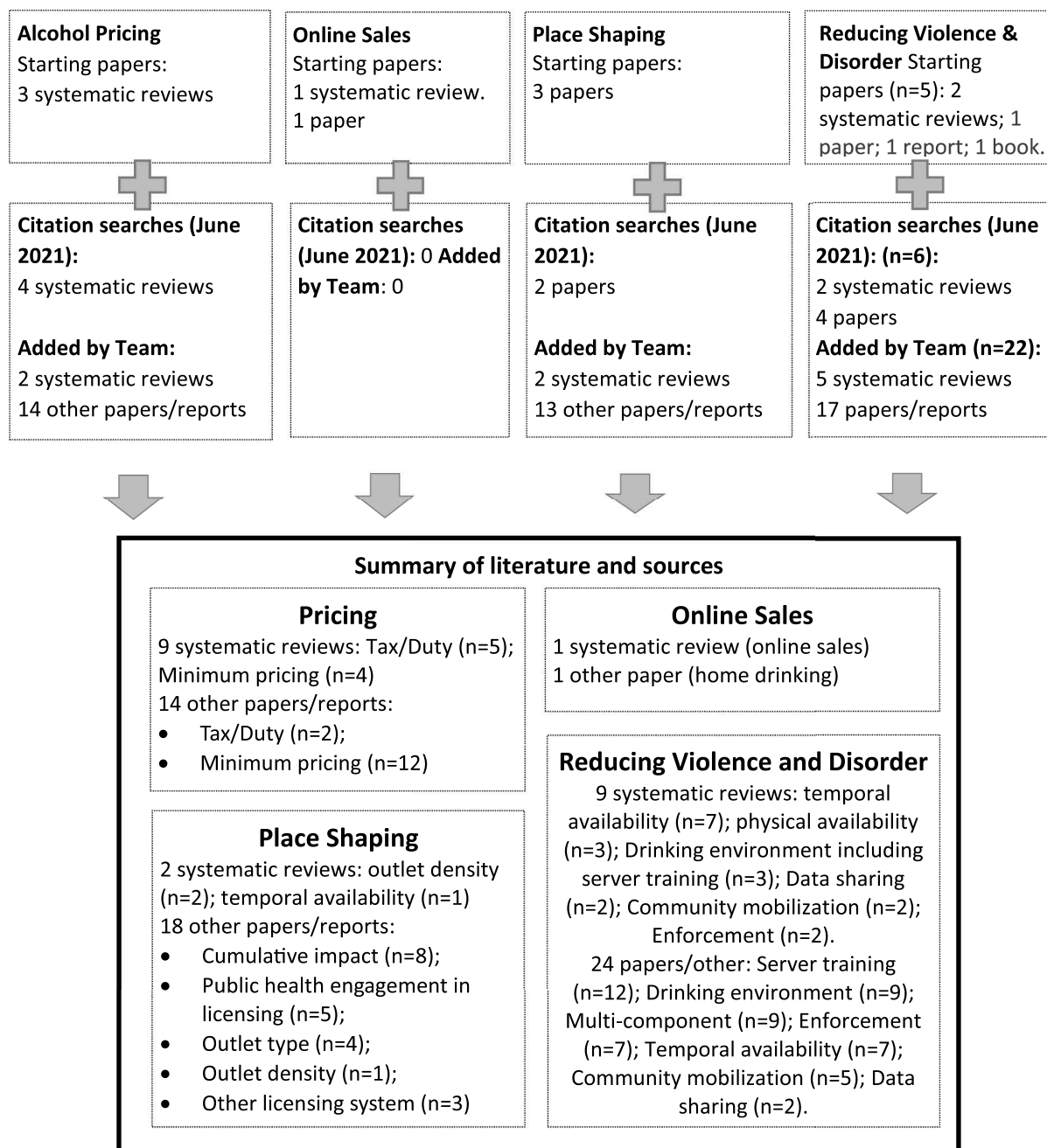


Fig. 1. PRISMA diagram for rapid evidence reviews.

(Boniface et al., 2017; Maharaj et al., 2023; Wagenaar et al., 2010). Reviews support the conclusion that price rises in on- or off-trade settings will reduce consumption of alcohol in that setting, but do not examine how price rises in one may influence consumption in the other.

Minimum unit pricing (MUP; setting a minimum price per standard unit of alcohol below which alcohol cannot legally be sold) is a policy intervention that has been implemented in several jurisdictions worldwide including in parts of the UK and Australia. It has been subjected to numerous modelling studies and primary evaluations. Modelling studies, dominated by the Sheffield Alcohol Policy Model, find that MUP can achieve significant reductions in alcohol consumption and harms (Angus et al., 2016; Holmes, Meng, et al., 2014). These studies consistently suggest relatively limited but mixed impacts of MUP on-trade alcohol purchases which arise indirectly as MUP does not directly affect on-trade alcohol prices.

Primary studies of MUP (at £0.50 GBP per 8 g of alcohol) in Scotland indicate benefits in reducing alcohol consumption and deaths (Giles et al., 2021; Wyper et al., 2023). No impact of MUP was found on emergency department visits, ambulance call-outs, road traffic accidents, or crimes in the short term in Scotland (Krzemieniewska-Nandwani et al., 2021; Manca et al., 2023, 2024; So et al., 2021). Most studies have been unable to distinguish between outcomes linked to on- or off-sales consumption and the impact is likely to have diminished over time as inflation reduced the effective value of MUP (Angus et al., 2023; Fitzgerald, Manca, et al., 2022). For on-trade, a large study concluded that MUP in Scotland had not had a substantial effect on footfall or volumes, with no participants reporting ‘any evidence, anecdotal or otherwise, that there had been any changes in market share for the on-trade as a result of MUP’ (Frontier Economics, 2019). Evidence from Canada, Australia and, to a lesser extent, the Russian Federation and other CIS countries provides strong support that various forms of minimum pricing are effective in reducing alcohol-related harms such as hospital admissions and deaths (Maharaj et al., 2023; World Health Organization, 2022). Overall, there is strong evidence that MUP reduces alcohol sales and deaths, with limited evidence of any impact on-trade businesses.

Alcohol duty rises apply to both on- and off-trade prices, and therefore would be expected to have a direct impact on purchasing from both sources however their relative impact depends how and at what level duty is levied. In general when UK duty rises, greater reductions follow in off-trade purchasing than on-trade purchasing, because a greater proportion of off-trade prices are accounted for by duty (Angus & Ally, 2015). Reforms of UK alcohol duty in August 2023 included very limited ‘draught relief’ (HM Customs and Revenue, 2022), which is unlikely to result in major shifts from off- to on-trade but has yet to be evaluated.

#### Pricing expert views

In the workshops, experts concurred that there is good evidence that pricing interventions reduce alcohol consumption and harm. Experts generally supported both tax and MUP (especially if the latter is regularly updated):

MUP is the number one – we know it works [for public health] and industry people make more money even though they sell less alcohol. [Workshop 1]

Tax is the most efficient, effective way to reduce consumption and harm. [Workshop 2]

Experts were cautious about the potential for off-trade price rises to have knock-on impacts (positive or negative) on-trade premises, noting that little is known about this. For example, the introduction of MUP would increase the average price of off-trade alcohol consumed by ‘pre-drinkers’, and this would be expected to reduce pre-drinking volumes. Reduced pre-drinking might be welcomed by the on-trade if it reduced customer intoxication levels on arrival at venues, but the knock-on

impact of higher prices for pre-drinks on spending on alcohol in the on-trade is unknown. Customers may maintain their pre-drinking and have less to spend in the on-trade. The possibility of different MUPs for on- and off-trade was discussed, with no consensus on how this would affect revenues in both sectors, nor its likely acceptability.

That’s all about the cross-price elasticities between on- and off-trade prices right, so what happens when you increase the price of off-trade alcohol? Do people drink more or less in the on-trade? Do they shift their consumption, or do they just become more abstemious overall and reduce their consumption? And we honestly don’t know because the night-time economy is much more reliant on certain subsets of the population for its money I guess, so you really care about the cross-price elasticities in those specific groups...you need econometric studies.” [Workshop 2]

Experts noted diverse international approaches to structuring and setting alcohol duties. A ‘sweetspot’ alcohol duty increase would ideally only affect the off-trade but ‘you’d have to totally restructure the [UK] tax system’ perhaps to differentiate taxes on closed containers or increase the on-trade benefits provided through ‘draught relief’ approaches (see above). The off-trade sector was felt to benefit more from alcohol duty cuts and suffer more from duty rises. Experts noted that options for supporting on-trade businesses with taxation revenues, such as tax rebates, are not straightforward to design, and some questioned whether money raised by alcohol taxation should be spent on businesses which sell alcohol.

My concern with [supporting on-trade] has always been that the on-trade covers a whole range of businesses, not all of which meet the desirable criteria. They’re not all nice, wood-panelled, lovely, traditional pubs. [Workshop 1]

One expert suggested that attempts to support the on-trade would be more effective through reductions in other taxes, which would not directly make alcohol more affordable:

If you want to support a business, the biggest costs they’re facing are not really from alcohol duties which get shared out down the supply chain but the direct taxes on those businesses from local authorities or whatever the system is. [Workshop 1]

Unlike tax revenues, additional income from MUP goes to retailers and may be disbursed through the supply chain; it was felt that this meant that industry actors did not oppose MUP in Northern Territory, Australia. This dilemma was reflected in other comments:

...a big difference between minimum pricing and tax is in terms of who gets the extra cash. So with minimum pricing, the majority of the additional money goes to retailers and producers whereas with tax it goes to the government and from a public health perspective... we could argue till the cows come home about whether we are neutral about that or not, whether giving money to the alcohol industry is inherently bad or whether government could be using that money to do other good public health stuff. [Workshop 2].

One solution could be to introduce a ‘public health levy’ on off-trade (or larger) alcohol retailers to ‘claw back’ some of the revenues generated by MUP but this was not discussed in depth.

Overall, despite some uncertainties, experts were confident that higher taxes and/or the introduction of MUP where it was not in place, represented a strong contender as a ‘sweetspot’ policy. One expert suggested that on-trade stakeholders supported MUP once it was explained that it would only affect off-trade prices, and the lack of any obvious negative effect on-trade in Scotland was noted.

#### Regulation of online/remote sales

##### Online sales evidence

There is limited research on effective policies to regulate online

alcohol sales. A systematic review (Colbert et al., 2021) examined policies governing online alcohol sales and home delivery in 77 jurisdictions across six English-speaking countries (USA, Canada, UK, Ireland, Australia, New Zealand). Most jurisdictions (69 %) were found to have either temporarily or permanently relaxed regulations for alcohol home delivery during the pandemic. The review also found that:

- Typically, alcohol delivery was only permitted by off-trade establishments ( $n = 44$ )
- Most jurisdictions ( $n = 53$ ) permitted delivery of any alcohol type with 39 limiting the quantity that could be delivered.
 

In several US states, the availability of alcoholic beverage types decreases with strength. For example, in North Carolina, home delivery of beer and wine, but not spirits, is permitted.
- Most jurisdictions ( $n = 60$ ) do not stipulate a time-frame for home deliveries different from standard licensing hours. Five restrict alcohol delivery to fewer hours than the maximum trading hours for standard licensed premises.
- Compliance with age restrictions was relatively low (0–20 % for alcohol delivery services compared to 28–74 % for bricks and mortar stores)

In most jurisdictions, regulation of online sales does not meet the same standard as that for ‘bricks and mortar’ establishments, thus a more systemic approach has been suggested, for example utilising alcohol licensing systems to manage online alcohol provision through quantity restrictions (Reynolds & Wilkinson, 2020b)

#### Online sales expert views

Experts agreed that online and home delivery alcohol is an under-researched area, highlighting the lack of data on online sales compared to in-person sales, and the potential for continued growth post-pandemic. Several suggested exploring regulation of online sales is timely:

It [the online market] has the potential to grow even more so to me this is an area that’s particularly of interest. How can we pre-empt some of the problems that might follow from a growing online market? [Workshop 1]

Experts were cautious about banning online sales of alcohol *per se*, with unintended consequences suggested for specific population groups or for on-trade businesses which also provided deliveries.

I’m less attracted to banning all online delivery because to me there’s a bit of an equity access. If people are unable to shop elsewhere, and unable to go out to the shop and they can’t buy alcohol online then there seems to be a bit of a discrimination there to me. I’m more attracted to things like restrictions on time of delivery, quantity, speed of delivery and things like that. Those seem more feasible to me. [Workshop 1]

There’s quite a lot of on-sales premises that have enjoyed being able to expand their businesses in this way. I don’t know whether it’s profitable for them in the longer term or not...but it might be a tricky sell in terms of supporting the night-time economy. [Workshop 1]

On this basis, an important distinction was made between online sales of alcohol, and alcohol sold online to accompany a food delivery:

My understanding is that [selling alcohol online with food deliveries] has been beneficial for restaurants and pubs to a degree and I’m not sure that that’s a bad thing *per se*, if again you have sensible limits around it, if it’s with a substantive meal and they’re able to deliver. [Workshop 2]

However, restricting online off-sales could support the on-trade:

I think it’s consistent with an argument that you are helping the night-time economy...they [online off-sales outlets] have a lot less

restrictions than the bricks and mortar store so it seems to me like rhetorically you could say ‘let’s bring in more restrictions on the online availability and we’re going to focus on developing our night-time economy’. [Workshop 2].

Based on available evidence, several types of restrictions were discussed in relation to the off-trade, including quantity, speed/timing of delivery and price promotions. Restricting delivery speed was considered one means of reducing alcohol consumption by reducing ‘the convenience factor’ and potentially benefiting more vulnerable consumers.

I guess if you’re drinking at home and you run out of alcohol and the off licence is closed you have to go to the pub if you want to have another drink if you can’t buy it anywhere. Whereas if you have Deliveroo or whatever then you could just order it and have it delivered in another hour or whatever. I think that’s maybe where this sort of sweetspot is around speed of delivery at least. [Workshop 1]

There’s been two major groups that have been hugely affected by rapid online delivery and that is alcoholics [sic] and family violence. They are the two that are really suffering from online [deliveries]... talking about the fear of the ‘knock, knock, knock’ on the door of the alcohol being delivered but also just how devastating it is to be an alcoholic [sic] in this age. At least you used to have to go out the door to get a drink, now you’ve got apps pinging you saying “buy more alcohol”. So I think the delayed delivery saying at least one hour and certainly time limits to say not after 10pm. would be very reasonable. [Workshop 2]

Restricting quantity of alcohol delivered and price promotions were felt to have potential to reduce consumption by reducing bulk-buying, as was removing free delivery offers for larger orders:

With quantity restrictions, you could look at [preventing] a lot of the marketing here [which] will say ‘if you order more than like six bottles of wine, you’ll get free delivery’...the consumption, the purchasing from the online [stores] is higher on average than purchasing in person because of this potential to ‘buy up’ [buy a larger amount of alcohol] to then get a discount, to get the free delivery. [Workshop 2]

One expert suggested that regulation could provide a means of tackling online pricing structures to ensure that alcohol is not more cheaply available online:

We should discuss price limits - you shouldn’t be able to buy a home delivery cheaper than at a bottle shop but then there should also be bans on discounting on bulk buys and ultimately you want it to be more expensive so that you don’t get that sort of stuff happening. So if you could ban the discounting element for more, they can compete amongst themselves but they can’t offer you free delivery which is effectively a discount. [Workshop 2]

Overall, despite uncertainties about the nature of restrictions, regulating online sales, including restrictions on speed or timing of delivery were thought to have potential to support on-trade businesses and reduce harm, but evidence is limited.

#### Place-shaping: using premises licensing to shape local alcohol retailing

##### Place-shaping evidence

Local authorities seek to shape their local environments through a range of strategies informed by goals such as economic regeneration, reducing social harms and improving health, some of which may conflict. We found no systematic reviews specifically considering ‘place-shaping’, but we draw on relevant primary studies, predominantly from England and Scotland (see Fig. 1).

In England, alcohol licensing policies and powers are used to shape

the types and hours of alcohol-retailing premises (Fitzgerald et al., 2023; O'Donnell et al., 2022; Reynolds et al., 2018). Place-shaping via licensing may seek to limit licences for new 'vertical drinking' premises primarily focussed on alcohol consumption, or for off-licences, and/or to encourage a more diverse environment with family-friendly, food- or art-oriented establishments (Grace et al., 2016; Reynolds et al., 2018).

In England, place-shaping is largely only possible in areas subject to 'cumulative impact policies' (CIPs). CIPs are an optional tool for licensing authorities to limit the growth of new on- and/or off-trade premises in areas where there is evidence that the type or number of premises is undermining licensing objectives. When a CIP is in place, the onus is on licence applicants to demonstrate that granting the application would not contravene licensing objectives, thus reversing the usual burden of proof and facilitating legal rejection of licence applications (UK Parliament, 2017).

Studies from London suggest no clear impact of CIPs on alcohol availability, with no long-term changes to application submission rates, statistically insignificant reductions to opening hours (Pliakas et al., 2018) and no effect on the proportion of applications receiving objections (Sharpe et al., 2017). Some CIPs may shape the nature of outlets that emerge over time, by, for example, increasing the number of 'food-led' establishments (including licensed take-aways) (Bevan, 2015; Sharpe et al., 2019). None of these studies measured harm outcomes but De Vocht et al. found that stronger local licensing policies (including the presence of a CIP) were associated with modest reductions in alcohol-related crimes and hospital admissions in England (de Vocht et al., 2015, 2016). A study of 39 local authorities in England and Scotland examined the impact of public health involvement in licensing and found that place-shaping was the focus of several public health teams (Fitzgerald, Mohan, et al., 2022; O'Donnell et al., 2022). No association was found between increased public health effort to influence licensing and health or crime outcomes over a seven year follow up period (de Vocht et al., 2022).

Qualitative evidence from ethnographic studies in England suggest that the impact of place-shaping may be mitigated by real-world challenges. One study found applicants were often well-resourced (especially if from national retail chains). Lawyers often had extensive experience in licensing applications and worded applications to ensure they "avoided the appearance of applying for an outlet that was 'alcohol-led'" or "likely to encourage public drunkenness and antisocial behaviour" (Grace et al., 2016). As a result, premises may only have the appearance of being lower risk for causing alcohol harm, and many 'hybrid' premises change in nature through the day. Hybrid establishments are generally viewed positively in terms of public health, crime and safety, but could introduce drinking into times/spaces where it was not previously present or acceptable (Thompson et al., 2018).

Outside of the UK, a freeze on granting new late-night licences was implemented in 2008 in Victoria, Australia, but was reversed to support business recovery after COVID-19 lockdowns (Waters, 2023). Systematic review evidence points to persistent uncertainty about the relative contribution of the volume or clustering of different types of premises to harms (Gmel et al., 2015, 2016; Holmes, Guo, et al., 2014). Premises size may matter too (Miller et al., 2021). In summary, place-shaping may change the nature of retailing but its impact on overall consumption and harms is unclear and likely to be modest.

#### *Place-shaping expert views*

Experts noted the difficulty of place-shaping in the UK and the potential that licence applicants and experienced lawyers find ways around such efforts. Some felt that unintended consequences could stem from the introduction of policies to change the dynamics of local spaces including, for example, a concentration of problem behaviour or normalisation of alcohol in traditionally dry spaces:

This idea of niche theory [is] that if you start reducing the number of certain types of outlet you start concentrating the problem in those

outlets and actually make it worse so I think there is a risk associated with that. [Workshop 1]

It seems almost like in conflict with alcohol as 'no ordinary commodity' because it's making it an ordinary commodity because you can go to the cinema now and you can drink and you didn't used to be able to and things, so it's becoming more normalised and I suppose the other thing is the reduction of places, where people in recovery who don't want to be in places where alcohol is served, that its reducing those places [Workshop 1]

Experts also discussed tensions in place-shaping with public health having a restricted voice in policy, whilst economic considerations often take priority over health concerns:

I think it's been quite well documented, the challenges that public health has in shaping licensing processes... being kind of relative newcomers to the space, public health not being a licensing objective in the UK; relatively limited resource in public health departments; and kind of political clout within councils... I think all of those make it challenging of who actually gets to do the place shaping and what are those fundamental goals of who's doing it and if its economic recovery ...that place shaping might look very different than if the fundamental goal is about reducing alcohol harms. [Workshop 1]

Finally, it was suggested that place-shaping was limited in the British context as it could only apply to new premises, and there is already very high outlet density from existing premises.

It always strikes me that it's really hard to think about UK availability in the context of international literature because when you look at the on-trade outlets per capita in the UK, its way, way above any other country. (...) the UK was so saturated it didn't really make a difference what you did [to contain outlet density] because as always whatever you want to do [in terms of finding somewhere to have a drink] the option is there which is obviously completely different to somewhere like Australia where you have dry spots and very wet spots and so on. [Workshop 1]

#### *Violence reduction interventions including changes to service/closing times*

This policy area includes both controls on opening hours of premises or alcohol service hours (often governed by national legislation with little or no local discretion) and a diverse range of interventions including age verification, breathalysers, staff training, greater levels of policing and joint working between stakeholders (often implemented locally as part of a package).

#### *Evidence*

Systematic reviews (Babor et al., 2022; Hahn et al., 2010; Popova et al., 2009; Sanchez-Ramirez & Voaklander, 2018; Stockwell & Chikritzhs, 2009; Wilkinson et al., 2016) find that extensions in late alcohol trading hours are linked to increased intoxication, assaults, injuries, and burden on public services. Primary evaluations of late-night trading hour changes using robust methods in HIC in the last decade have reached similar conclusions, especially with regards to additional hours after midnight. For example, a 1-hour extension of closing times in the central district of Amsterdam was associated with 34 % more alcohol-related ambulance call-outs (from 2 to 6am) (de Goeij et al., 2015). In a study across 18 Norwegian cities, each additional 1-hour extension to opening times was associated with a 16 % increase in police-reported assaults (10pm to 5am) and the converse was true for each 1 hour reduction in opening (Rossow & Norström, 2012). In Newcastle Australia, late night trading hours were reduced from 5am to 3:30am with a 1:30am 'one-way door' (more commonly called 'lockout' in Australia). The reduced trading hours (not the lockout) were associated with a 74 % reduction in police recorded assaults, a reduction which was sustained for several years (Kypri et al., 2014). In the UK

however, evidence suggests that allowing local areas to grant 24 hour licences did not increase alcohol consumption or violence, though the latter shifted to later at night (Humphreys et al., 2013; Stevely et al., 2021).

Little evidence is available about the impact of changes in trading hours from a business perspective, except from one large study in Queensland, Australia (Miller et al., 2019). It found that the number of licensed premises trading and the number of customers attending premises in the affected precincts were stable or increased following implementation of restrictions in trading hours alongside other measures (Ferris et al., 2021). The number of live performances and original live music venues trading in one of the affected precincts was also unaffected by the measures (Puljević et al., 2021).

Comprehensive community projects, including approaches such as age verification, breathalysers, staff training, greater levels of policing and joint working between stakeholders including venues, have been shown to be effective in reducing alcohol-related harms, including violence (Babor et al., 2022). These approaches require extensive resources, although one older study found that community-based prevention was cost-effective (Månsdotter et al., 2007). As these interventions involve multiple components, it is generally unknown which components are responsible for successful outcomes or how individual components enhance or reinforce one another. The clearest evidence for effectiveness comes from multi-component interventions that combine server training with enforcement and community-level components.

The success of one example, Stockholm Prevents Alcohol and Drug Problems (STAD), was attributed to starting with a long time frame, high participation from key leaders and stakeholders, ongoing (rather than one-time) activities such as training, sustained police and licensing enforcement, and media coverage demonstrating progress (Wallin et al., 2004). Multi-component programmes based on the STAD project have been implemented in various UK localities and have shown benefits in reducing sales of alcohol to pseudo-intoxicated patrons, with effects stronger when components included enhanced law enforcement and particularly when all components (enhanced enforcement, staff training and community mobilisation) were implemented (Quigg et al., 2022). Other programmes have shown initial impacts that were not maintained once the program ended (Babor et al., 2022) and a recent initiative to replicate STAD in Europe was not able to achieve the same commitment and success outside Sweden (Quigg et al., 2019).

Evidence of the effectiveness of individual violence prevention interventions such as police campaigns, enhanced enforcement and proactive policing have had limited effects (Babor et al., 2022). Just one freestanding violence prevention training program has been evaluated – in a randomised control trial in Toronto, Canada, the Safer Bars program was found to have a modest but significant impact on reducing physical violence (Graham et al., 2004) as well as improving bar staff's knowledge and attitudes (Graham et al., 2009). More recently, attention has focused on preventing sexual aggression and assaults (Graham, Bernards, Abbey, et al., 2014; Graham, Bernards, Wayne Osgood, et al., 2014). Preliminary research suggests bystander-type training can be effective in changing knowledge, attitudes, and willingness to intervene (Powers & Leili, 2018), although the impact on the incidence or severity of sexual assault has not yet been demonstrated.

Server training programs designed to prevent overserving of customers with alcohol have been widely evaluated and show mixed results (Babor et al., 2022; Martineau et al., 2013b), perhaps due to recognised conflicts with licensed premises goals to make money and to ensure that customers have a good time (Babor et al., 2022). Impediments to the success of such programmes include financial incentives to overserve, poor motivation, liberal norms for intoxication, low priority of enforcing serving laws, and pressures of meeting customer demands during busy periods (Buvik & Rossow, 2017; Buvik & Tutenges, 2017).

The “last drink” approach was originally found to have an impact short of statistical significance in New South Wales, Australia (Wiggers

et al., 2004) and has been widely adapted in UK studies reported in one systematic review (Droste et al., 2014). People stopped by police or presenting to emergency departments are asked where they consumed their last drink. Statistics are kept to identify “high risk” premises, and these premises are targeted for intervention (e.g. mandatory conditions on trading, police visits, training) (Menéndez et al., 2015; Warburton & Shepherd, 2006). Whilst violence reduced in most studies, attribution of this effect to the intervention is difficult due to confounding factors (Droste et al., 2014). This approach may support hospitality businesses by focusing intervention (including earlier closing) on problematic premises, whilst rewarding those not contributing to acute harms. It may therefore be another means of shaping which premises thrive, akin to place-shaping but subject to similar limitations.

#### *Violence reduction - expert views*

Experts were united in their support for earlier closing times, especially after midnight, though were divided in terms of whether such policies met the second ‘sweetspot’ criterion of supporting on-trade businesses.

The evidence is pretty strong about earlier closing times if you can get that, but it's not a sweetspot. [Workshop 1].

One colleague cited the Queensland evidence above (Ferris et al., 2021; Puljević et al., 2021) as demonstrating that earlier last drinks times (up to 3am) did not adversely affect businesses:

The reason is they're not paying huge staff costs after 3 a.m. because staff cost a lot of money and you need more staff to deal with drunker people and people don't drink a lot after 2a.m. They just don't. So they're not making anywhere near the money and... the most lucrative stuff you can do in nightlife is entertainment and food by far. Alcohol is not as lucrative as food, and entertainment brings in people who buy a lot of food and a lot of more expensive alcohol rather than really, really, cheap alcohol. [Workshop 2]

Experts noted alcohol may be more lucrative than food in other cities or countries (e.g., Canada) but questioned who wanted later opening hours – whether it was desired by smaller business especially in contexts where it is difficult to recruit sufficient staff, or by young people.

I wonder if your smaller community premises, do they actually want to open later, do we have any good data on whether the vast majority of those sorts of premises actually want to open later, or are they just doing it because the guy down the road has opened /later and they feel they have to? Has anyone really got independent data on that from owners? [Workshop 1]

Have we actually got any data that young people want to be going out at that time at night? ...because they're being pushed to do that by the model that we have at the moment, but a lot of people might prefer to come out earlier too, but again that's something that we don't know about. [Workshop 1]

Experts felt reduced closing times (e.g., to 2am from 3/4/5am) may shift on-trade drinking to earlier in the night and reduce pre-drinking, in turn reducing the numbers of consumers who arrive in the on-trade intoxicated. Other, less alcohol focused, businesses might also benefit, though it was noted that some customers might continue drinking in homes after a night-out – especially if takeaway alcohol was still available.

There was agreement that individual violence reduction interventions (other than earlier closing times) were unlikely to work in isolation, if at all to reduce harms.

If you pick up any one of those on their own, it's unlikely to have any real impact, and you do need the collective commitment and enthusiasm and enforcement in order to make things like that work, and in the face of bad licensing and cheap alcohol you're fighting a losing battle really...obviously staff training is essential... I think



enforcement as well is key, but proactive enforcement. Yeah it needs to be a package I'd say. [Workshop 1]

Experts felt staff training to manage aggression and avoid sales to intoxicated individuals should be a routine and compulsory component of induction and might make staff and customers feel safer – and therefore assist with increasing patronage. Smaller businesses may require external resources to pay for such training though some noted that the turnover of part-time staff and students working in pubs meant investment in training would have very limited effect as they would be 'gone next week'. Another noted that for alcohol control and safety measures to work, they need to 'embedded effectively... into everyday practice' after research studies have ended.

Experts suggested elements such as enhanced police enforcement and community involvement were resource intensive, and a long-term approach was needed to build relationships with licensees. Experts were sceptical about 'false dawns' in terms of training and safety initiatives, often 'enthusiastically embraced' by trade businesses and groups when 'the evidence for this stuff is really weak'. Consensus remained that these policies would have, at best, a small impact on harms, but could form the basis of good practices generally, with potential for modest and targeted effects:

Its maybe important as part of something else, but somehow we have to avoid the possibility that it will be embraced at the expensive of really effective policies. [Workshop 1]

One expert noted that programme effectiveness can be due to the context into which an intervention is introduced, suggesting that the success of the STAD programme (see above) may have been partly explained by pre-existing poor practice in relation to serving intoxicated people in Stockholm prior to its introduction.

## Discussion

We present a detailed and novel exploration of 'sweetspot' alcohol policy options with potential to benefit public services and health, whilst avoiding or minimising negative effects on-trade businesses. In a high-income context, there is strong evidence that pricing interventions, particularly MUP, can have public health benefits with minimal or no impact on bars/clubs. Cheap shop-bought alcohol is considered by experts to be a potential threat to on-trade sustainability, and MUP and alcohol duty rises can reduce the differential between on- and off-trade prices, as well as possibly reducing pre-loading and side-loading. Further evidence is needed to examine indirect effects arising from cross-price elasticities. This evidence matters for policymaking: in current UK debates about alcohol duty, industry lobbying asks politicians to 'save our local' pub by freezing or cutting duty even though that makes super-market alcohol relatively more affordable (Barnes & Speed, 2023). Such calls were successful in achieving a freeze on overall alcohol duty rates, despite a new provision in the UK's duty system for 'draught relief' which could have been used to protect pubs from any rise (HM Customs and Revenue, 2022).

Online or remote sales of alcohol may not currently pose a large threat to on-trade sales in many jurisdictions compared to shop-bought alcohol but are growing rapidly. In cities in England, rapid grocery delivery services compete for market share and offer deep discounts on purchases, including alcohol, which can be delivered within 15 min. This is an example of a disruptive business model, which existing licensing regulations are poorly equipped to address. Some greater regulation may help to protect public health, given increased harms arising from home drinking since the COVID-19 pandemic. A 'sweetspot' here may be to retain the ability of on-trade premises to offer take-away alcohol (with limits e.g., on quantity or required to be accompanied by food), whilst further regulating the speed/time of delivery, age verification, staff training or marketing of alcohol sold remotely and delivered from larger off-trade premises. Higher licensing fees linked to alcohol

sales could be used to recoup costs for enforcing such regulations.

Reducing, or at least restraining, late-night licensing hours is also generally effective in reducing alcohol-related harms, and may not be as harmful to businesses as sometimes claimed. Evidence is limited to one study from Queensland finding that trading and live music performances were unaffected (Ferris et al., 2021; Puljević et al., 2021). Further research is also needed on the interaction between alcohol sales hours and opening hours, and on business and public views and experiences. Northern Ireland has just introduced a 'one hour' drinking up time (NI Assembly, 2021), when venues can stay open but no longer serve alcohol, whereas drinking up time in Scotland is 15 min. It is unclear whether permitting venues to open longer without serving alcohol encourages a diversification of offer from businesses or merely permits large quantities of alcohol to be purchased at 'last orders' and drunk over the extra hour – thus acting as a de facto extension of trading hours. Evaluation of the changes in Northern Ireland should examine the impact on businesses, services and health.

Whilst the evidence on pricing and opening hours has emerged from multiple countries worldwide, the context in which policies are judged is critical. There is little evidence of greater harms arising from later opening of licensed premises in England, though challenging for services. In contexts where all premises already close no later than, say, midnight, there may be less benefit of further restrictions. Any benefits of any earlier closing of on-trade premises are likely to be diluted, though not eliminated, in contexts where off-trade or online alcohol is still available after closing time. Some, but not all, customers will engage in 'post-drinking', many will likely just go home. There is an increasing body of evidence on minimum pricing from Scotland, as well as Canada and Australia, but further evidence from Ukraine and CIS countries on the impacts of minimum prices would aid understanding how effects might vary across different contexts. Similar contextual effects are important in 'place-shaping' and violence reduction initiatives too. We do not understand well how the characteristics of different premises or their location/density give rise to different levels of associated alcohol-related violence in different contexts (Holmes, Guo, et al., 2014). There remains a need for rigorous evaluation of policies and natural experiments, with the application of evaluation methodologies suitable for capturing and measuring unintended consequences (Craig et al., 2022; Oliver et al., 2019); particularly important where there are multiple, often competing, goals such as in alcohol licensing. More broadly, there may be unintended harms that arise from discourse that considers how to protect on-trade businesses, as it implies that those businesses are less harmful even as they sell the same product. Further, consolidation in the alcohol industry and collective action via trade bodies may mean that it is more difficult to separate the interests of businesses in the on-trade, off trade, or production of alcohol (Fitzgerald et al., 2021).

## Strengths and limitations

We have made a pragmatic attempt to describe evidence and capture expert views where a series of systematic reviews was not feasible due to capacity and resource constraints. Others could build on our work more systematically. Nonetheless, we provide straightforward evidence summaries and expert commentary on some of the key issues relating to the balance of effects of alcohol policy interventions on health outcomes, services and on-trade hospitality businesses. We summarise the findings from systematic reviews where available, which enabled us to comment on the volume and strength of the evidence for most policies considered. We include what we believe is the first attempt to summarise the evidence base on place-shaping from multiple studies.

By necessity, however, given the range of interventions considered at some depth, we needed to narrow the focus, and therefore take a HIC perspective, with experts only from Anglophone countries and a greater focus on the UK policy environment. A key omission is consideration of marketing restrictions, the diversity of which means they would merit their own review. The findings in terms of 'sweetspot' policy options

would likely be very different in other alcohol policy contexts including low- and middle-income countries (some of which have much higher levels of abstinence and/or lower levels of regulation of alcohol supply), and those with differing drinking cultures (where alcohol sales may be banned or consumption may be frowned upon, often for religious reasons). Our evidence summaries are not systematic and there are likely gaps in the evidence cited; we did not conduct any formal quality assessment of reviews or the diverse primary studies included. However, our multi-country team included leading experts in each of the policy areas, many of whom have decades of experience in alcohol policy research, and have a broad and deep knowledge of relevant literature, mitigating against major omissions or overinterpretation of weaker studies.

## Conclusion

Policymakers need timely advice and cannot always wait for evidence to emerge or for comprehensive systematic reviews: here we summarise evidence drawing on expert views on key current alcohol policy questions. Raising the price of alcohol particularly through MUP and more strongly regulating remote delivery of off-sales alcohol are likely to improve public health outcomes without adversely affecting on-trade businesses. Reduced late-night opening hours are also more likely than not to reduce alcohol related harms though their effect on hospitality businesses requires further study. Using licensing laws to shape the nature of alcohol retail premises in an area has uncertain impact. Various violence reduction initiatives, when implemented locally and robustly in combination, may offer a way to have a modest impact on harms, whilst supporting hospitality businesses, but are more difficult to resource and sustain. They should be viewed as an adjunct, rather than an alternative, to more effective policies.

## Ethics approval

The study was approved by the University of Stirling NHS Clinical or Invasive Research Ethics Committee [NICR 2021 05471545].

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## CRediT authorship contribution statement

**Niamh Fitzgerald:** Writing – review & editing, Writing – original draft, Supervision, Project administration, Methodology, Funding acquisition, Conceptualization. **Rachel O'Donnell:** Writing – review & editing, Methodology, Formal analysis, Conceptualization. **Isabelle Uny:** Writing – review & editing, Methodology, Formal analysis, Conceptualization. **Jack G. Martin:** Writing – review & editing, Methodology, Formal analysis. **Megan Cook:** Writing – review & editing. **Kathryn Graham:** Writing – review & editing. **Tim Stockwell:** Writing – review & editing. **Karen Hughes:** Writing – review & editing. **Claire Wilkinson:** Writing – review & editing. **Elizabeth McGill:** Writing –

review & editing. **Peter G. Miller:** Writing – review & editing. **Jo Reynolds:** Writing – review & editing. **Zara Quigg:** Writing – review & editing. **Colin Angus:** Writing – review & editing.

## Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

N.F. declares that she has received fees for serving as an expert witness for the Government of Ireland in a challenge to pandemic-related restrictions on licensed premises.

T.S. declares receipt of fees for serving as an expert witness on behalf of (i) the Ontario Public Service Employees Union in a challenge to 7/11's applications for liquor licences in their many corner stores and gas stations; (ii) individuals seeking damages for injuries caused by accidents involving intoxicated people. He also declares receiving research funds, travel expenses and personal fees from government alcohol monopolies for research on alcohol and public health policy in Sweden, Finland and Canada.

R.O., I.U., J.M., M.C., K.G., K.H., C.W., E.M., P.M., J.R., Z.Q. and C.A. declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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## Supplementary materials

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