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Restricting the advertising of high fat, salt and sugar foods on the Transport for London estate: Process and implementation study

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ABSTRACT

Introduction: One in five UK children aged 10–11 years live with obesity. They are more likely to continue living with obesity into adulthood and to develop obesity-related chronic health conditions at a younger age. Regulating the marketing of high fat, salt and sugar (HFSS) foods and beverages has been highlighted as a promising approach to obesity prevention. In 2019, Transport for London implemented restrictions on the advertisement of HFSS products across its network. This paper reports on a process evaluation of the design and implementation of this intervention.

Methods: In 2019–2020, we conducted semi-structured interviews with 23 stakeholders. Interviews with those responsible for implementation (n = 13) explored stakeholder roles, barriers and facilitators to policy development/implementation and unintended consequences. Interviews with food industry stakeholders (n = 10) explored perceptions and acceptability of the policy, changes to business practice and impact on business. Data were analysed using a general inductive approach.

Results: Practical challenges included limited time between policy announcement and implementation, translating the concept of 'junk food' into operational policy, the legal landscape, and reported uneven impacts across industry stakeholders. Political challenges included designing a policy the public views as appropriate, balancing health and financial impacts, and the perceived influence of political motivations. Consultation during policy development and close communication with industry reportedly facilitated implementation, as did the development of an exceptions process that provided a review pathway for HFSS products that might not contribute to children's HFSS consumption.

Conclusions: Findings suggest that restricting the outdoor advertisement of HFSS foods and beverages at scale is feasible within a complex policy and business landscape. We outline practical steps that may further facilitate the development and implementation of similar policies and we report on the importance of ensuring such policies are applied in a way that is perceived as reasonable by industry and the public.

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1. Introduction

Regulating the advertisement of high fat, salt and sugar (HFSS) foods and beverages has been promoted as a policy lever for childhood obesity prevention by local and national public health policymakers and the World Health Organization (Lambie, 2011). The promotion of such policies is in recognition of the increasing importance of poor diet as a major determinant of childhood obesity. In the UK, children's sugar and saturated fat intakes exceed recommended levels and 20% of children aged 10–11 live with obesity (NHS Digital, 2020). Prevention efforts focused on children and young people are key, as those who live with overweight or obesity in childhood are more likely to live with obesity in adulthood and develop obesity-related chronic health conditions, such as Type 2 diabetes, earlier in life (Sahoo K, 2015).

The advertisement of foods and beverages has been shown to affect nutrition knowledge, preferences, purchasing, and consumption in children, with television advertising shown mainly to promote less healthy products (Cairns et al., 2013). These commercial activities may also exacerbate diet and diet-related health inequalities, as people belonging to more disadvantaged households have greater exposure to HFSS advertising and companies that deliver them in a range of outdoor, recreational and digital settings (Adams et al., 2012; Backholer et al., 2020).

In the UK, government policies aimed at curbing children's exposure to the advertising of HFSS foods and beverages on television have been in place since 2007. Restrictions targeted the advertisement of HFSS foods on dedicated children's TV channels and around programming 'of particular appeal' to children (Galbraith-Emami and Lobstein, 2013). However, children are also exposed to HFSS food and beverage advertising in other settings; televised media itself represents only 18% of total advertising by revenue based on projections for 2021 (GroupM, 2020). Evidence suggests that restrictions targeting a broader variety of media are required in order to have meaningful impact (Adams et al., 2012).

Governed by the Mayor of London, Transport for London (TfL) is a government body responsible for Greater London's transport system, including London's roads as well as several rail networks such as the London Underground, London Overground, Docklands Light Railway and TfL Rail. In February 2019, TfL implemented restrictions on the advertisement of HFSS foods and beverages across their network (see Box 1 for policy details and timeline). While commercial advertising accounts for a small proportion of TfL's revenue (2.8% in 2017/2018) (Transport for London, 2019a), TfL has one of the most valuable advertising estates in the world. It owns 20% and 40% respectively of the UK and London's outdoor advertising by value (Transport for London, 2019b), with a total revenue of £152 million in 2017/18 (Transport for London, 2019a). In addition, 9.68 million trips are made on TfL operated public transport services per year, which equates around 36% of trips across all modes (walking, cycling, public transport and private motorised) made by Londoners (TfL, 2019c). As such, restrictions may contribute significantly to reducing exposure to HFSS product advertising. The policy was designed to help reduce childhood obesity by restricting the advertising of HFSS foods and beverages consumed by children, with the classifications of HFSS being determined using the Nutrient Profiling Model (NPM) (Department of Health, 2011; Greater London Authority, 2018). The NPM was originally developed by the Food Standards Agency for the purpose of deciding which foods can be advertised to children via television (Department of Health, 2011). The TfL policy was developed as a component of The London Food Strategy (Greater London Authority, 2018), a product of the Greater London Authority (GLA), the government body responsible for the administration of Greater London and whose remit includes transport policy for the region. The overall strategy aimed to improve health and reduce inequalities in London (Greater London Authority, 2018).

While a relatively 'simple' intervention, the TfL policy restricting HFSS advertising was developed and implemented within a complex policy and business landscape. Specifically, the regulation of commercial activity was juxtaposed against commercial interests in a context where commercial revenues are reinvested into public transport. Its implementation requires engagement with a range of actors, including government- and non-government actors involved in developing and implementing the policy, commercial stakeholders, and the general public, all of whom operate within their own existing policy and market contexts.

Following the launch of a public consultation on a policy restricting the advertisement of high fat, salt and sugar (HFSS) foods and beverages on the Transport for London (TfL) estate in May 2018, and announcement of the policy in November 2018, the new policy was implemented in February 2019 and further refined with updated guidance in June 2019. Updates included new rules on advertising single portions only, restricting the use of children in adverts and allowing the advertising of products incidental to the main advert. As part of a wider strategy (Greater London Authority, 2018), the policy aims to contribute to reducing childhood obesity. Advertisements portraying specific food and beverage products submitted for posting on the TfL estate are assessed against the Nutrient Profiling Model. Those portraying products classified as HFSS (receiving a score of >4 for foods and >1 for beverages (Department of Health, 2011)) cannot be advertised. Where the advertiser believes that a product portrayed in an advertisement does not contribute to HFSS consumption by children, they may submit an application to an exceptions panel which considers the evidence presented and makes a determination as to whether the product can be advertised on the TfL estate.

In this paper we report on a process evaluation of the development, design and implementation of TfL's restrictions on HFSS advertising. We aimed to explore the processes leading to and encompassing implementation of this intervention, with a focus on the political and practical factors facilitating and impeding implementation from the perspectives

Box 1
Policy restricting the advertisement of high fat, salt and sugar foods and beverages on the Transport for London estate

Following the launch of a public consultation on a policy restricting the advertisement of high fat, salt and sugar (HFSS) foods and beverages on the Transport for London (TfL) estate in May 2018, and announcement of the policy in November 2018, the new policy was implemented in February 2019 and further refined with updated guidance in June 2019. Updates included new rules on advertising single portions only, restricting the use of children in adverts and allowing the advertising of products incidental to the main advert. As part of a wider strategy (Greater London Authority, 2018), the policy aims to contribute to reducing childhood obesity. Advertisements portraying specific food and beverage products submitted for posting on the TfL estate are assessed against the Nutrient Profiling Model. Those portraying products classified as HFSS (receiving a score of >4 for foods and >1 for beverages (Department of Health, 2011)) cannot be advertised. Where the advertiser believes that a product portrayed in an advertisement does not contribute to HFSS consumption by children, they may submit an application to an exceptions panel which considers the evidence presented and makes a determination as to whether the product can be advertised on the TfL estate.

of: (1) stakeholders involved in developing and implementing the policy, and (2) commercial stakeholders involved in advertising on the TfL estate.

2. Methods

2.1. Sampling and recruitment

We recruited key stakeholders who were involved in developing and implementing the policy (hereafter referred to as "implementation stakeholders"), as well as key food and beverage industry stakeholders who were affected by the policy (hereafter, "industry stakeholders"). Sampling was purposive and informed by expert mapping of relevant actors and by snowball sampling. Implementation stakeholders were recruited from the GLA, TfL, non-governmental organisations (NGOs) and Public Health England (PHE), all of whom were involved in policy implementation. Industry stakeholders were recruited from industry bodies affected by the policy, companies contracted with TfL to market and manage its advertising sites and sell space to advertisers, media buyers (companies and agencies who purchase advertising space on behalf of clients and brands), and food and beverage brands.

2.2. Data collection

We conducted semi-structured interviews (in-person and by telephone) exploring the values underpinning the policy and narratives around the policy's development and implementation. Interview topic guides were developed and piloted prior to data collection, which took place from June 2019–May 2020, with fieldwork delays due to the COVID-19 pandemic. Topic guides for interviews with implementation stakeholders asked about their role, barriers to and facilitators of the development, and the implementation process and any unintended consequences. Interviews with marketing and food industry stakeholders explored perceptions and acceptability of the removal of advertising for HFSS products, impact on business, and changes made as a result of the policy. All interviews were audio-recorded, subject to participant consent. Where participants did not consent to audio recording (n = 2; one implementation and one industry stakeholder), the researcher (VE) took comprehensive interview notes. Audio-recorded interviews were transcribed verbatim.

2.3. Data analysis

Interview transcripts were uploaded to the qualitative analysis software NVivo 12 Plus ("Nvivo (Version 12 Plus)," 2020). For interviews that were not audio-recorded, fieldnotes were also entered into NVivo for analysis alongside interview transcripts. Data were subject to analysis using a general inductive approach (Thomas, 2006), with particular attention paid to discordant voices and/or dissonant cases. One researcher (CT) independently analysed a sample of the data, developing an initial coding framework. A second researcher (RM) independently applied this coding framework to a sample of ten transcripts to ensure reliability of the coding framework (see Appendix 1). Once the coding framework was agreed upon, one researcher (RM) coded data from all interviews, inductively adding new codes as new themes emerged. Coded data were then reviewed and organised into broader themes. The research team met regularly to achieve consensus in data interpretation.

2.4. Ethics and informed consent

Participants received an information sheet and consent form. Written informed consent was obtained from all participants prior to interview, with the exception of three participants who gave verbal consent (recorded over the telephone). Participants were able to withdraw from the study at any time. This study was approved by the London School of Hygiene and Tropical Medicine research ethics committee.

3. Results

3.1. Participation

We conducted 20 stakeholder interviews with 23 participants (Table 1) ranging from 30 to 90 min. Fifteen were conducted face-to-face and five by telephone. Seventeen interviews were conducted with one participant and three (all with industry stakeholders) were conducted with two participants. This was at the request of the participants and included communications personnel relevant to the delivery of the policy. Nine participants were industry stakeholders and 13 were implementation stakeholders. NGO names are kept confidential to preserve anonymity.

3.2. Emergent themes

A range of practical and political factors affecting the development, design, and implementation of the policy emerged from stakeholder accounts. Practical challenges included those relating to what some felt was too short a timeline between announcing and implementing the policy; translating the concept of 'junk food' into operational policy to determine which products should be affected; legal considerations; and uneven impacts on different industry actors. Political challenges included developing a policy that could be applied in a way the public would perceive as 'common sense; ' balancing health policy with the financial impact on TfL; and the perceived influence of public perception and political motivations. Consultation during policy development, close communication with industry stakeholders, building on existing policies, and legal agreements and the development of an exceptions process through which advertising requests could be reviewed where they involved HFSS products that might arguably fall outside of the scope of the policy reportedly facilitated implementation.

3.3. Practical factors

3.3.1. Timeframe for consultation and implementation

Industry and implementation stakeholders both felt that the timeline for initiating consultation (May 2018) and announcing (November 2018) and implementing (February 2019) the policy was fast-paced. Some industry stakeholders felt the rapid consultation was a cursory "box ticking exercise" for a policy that was already likely to be adopted, and according to some stakeholders the "rushed" timeline resulted in implementing a policy with foreseeable flaws that had to be subsequently addressed:

> "… there is no perfect solution to this stuff … I think if we had spent more time considering the implementation, we might have discovered some of these unforeseen, unintended consequences … without having to run through them live with commercial organisations."
>
> - Implementation stakeholder (GLA).

Participants also reported that, although TfL engaged effectively with industry when the policy was announced, the three-month period

Table 1
Interview participants.

Stakeholder type	Stakeholder subtype	Number of participants
Implementation	Greater London Authority	6
	Non-governmental organisation	2
	Public Health England	1
	Transport for London	4
Industry	Media buyer	2
	Media seller	3
	Food/beverage brands	2
	Industry body	3

between policy announcement and implementation was too short for advertisers (who work to much longer timelines when planning and executing advertising campaigns) to be prepared. An industry body representative explained that this approach could mean incurring considerable extra costs to bring planned campaigns into compliance:

> "… they're having to repay agencies, they're having to redo creative inhouse when they're actually already looking at a campaign for next year … their advertising is planned for the next 12 months at least … I think there was … a misunderstanding particularly from the political side that advertisers just kind of rang up a few days before and the advert appeared."
>
> - Industry stakeholder (industry body).

Advertisers also reported that they were not always informed of subsequent changes to the policy, sometimes only learning of them when advertisements they submitted were rejected.

In contrast, implementers reported listening to industry concerns and carefully developing the policy based on stakeholder input during the consultation period. There was concern that the NPM's scoring system would "give [a] black or white answer that may not necessarily work for this policy," prohibiting advertisements for products that should not be subject to restriction. The incorporation of an "exceptions process" which considered the reach of the restrictions on a case-by-case basis was reportedly based, in part, on feedback from industry, and implementers reported engaging with industry to elaborate this process:

> "… from the commercial team at TfL, they were excellent in terms of engaging with our members. They spent several days in here almost doing kind of a surgery of meetings to work out how the exemptions worked, so that products for things like cough sweets … how you except those and how you get those changes in place."
>
> - Industry stakeholder (industry body).

Implementers reported working closely with the commercial sector, including those developing the creative content for advertisements, to help stakeholders prepare for implementation of the policy. Recognising the difficulties advertisers faced with planned campaigns, they also reported acting flexibly in the first few months of implementation by striving to make decisions quickly on advertisements that were scheduled to run in the near-term and, in some cases, permitting the use of HFSS images in 'incidentals' (advertisements for non-food products or services – e.g., movies, insurance or travel – that featured HFSS products).

3.3.2. The challenge of operationalising the concept of 'junk food'

Industry and implementation stakeholders recognised the limitations of applying the NPM to the new policy. One limitation was that the NPM does not account for the portion size of products; rather it produces a score per 100g. Some stakeholders argued that this was overly sensitive and resulted in placing restrictions on foods typically consumed in small quantities, such as olive oil. However, it also meant some foods were policy-compliant that would commonly be considered as 'junk food', such as fried chicken, which has a high protein content that is considered a benefit within the NPM. Such foods could therefore also be advertised in quantities such as 'buckets', which would exceed the energy content recommended by government for a single meal:

> "There's quite a lot of fried chicken advertising which is actually permitted because the way the model works is it, it provides quite a lot of, sort of, good points to protein, so products with high levels of protein, even if they also have quite high levels of fat, become non HFSS."
>
> - Implementation stakeholder (GLA).

Some implementation and industry stakeholders argued that certain foods subject to restrictions according to the NPM, such as cough sweets, were not salient to children, as the policy's target population. Other participants took the view that advertisements for these products nonetheless promoted unhealthy eating among children. Companies could request policy exceptions for products that they could *demonstrate* do not contribute to children's diets, but some argued that consumer data used to support these requests had limitations for determining levels of consumption by children and was costly to industry:

> "Kantar data is what they would sometimes use as well but we know … that that doesn't really give the full picture … and also that isn't often available unless you have lots of money to buy it … and that was also for the [question of whether it has] … been demonstrated … that the product is not generally consumed by children … It was hard to, kind of, really be clear about whether it was or wasn't, if it's a product that's in a family home."
>
> - Implementation stakeholder (NGO).

'Incidentals' also introduced implementation challenges. Exposure to advertisements featuring HFSS foods was seen as contributing to childhood obesity, regardless of the advertisement's focus:

> "… I think it's right to have a policy around incidentals because what we were trying to do here is dampen down the amount of unhealthy food that children would see. So, and it makes no difference to the child whether they see it under a, the banner of a junk, an actual brand … Or whether they see it under the banner of something else, they're still seeing it. And if advertising didn't work, we wouldn't sell this network space, would we?"
>
> - Implementation stakeholder (GLA).

Such non-food advertisements were reportedly modified in some cases to ensure compliance with the policy, and in other cases ran elsewhere but not on the TfL estate. In an example of the latter, in an advertising campaign for a cartoon movie, an animated representation of a high-sugar food could not be nutritionally profiled as it was not a 'real' product. Rather than changing the image, which was a still from the film, the campaign appeared without modification in other locations and did not run on TfL's estate.

Stakeholders suggested that non-food companies were less likely to be aware of the advertising guidelines, and more likely to be taken off guard by the rejection of their advertisements based on the policy:

> "… from an ad, advertiser's point of [view], food and drink advertisers will have some understanding … of these rules already, but if you're a bank, or a holiday company, or a car company or whatever, you probably haven't been developing your adverts thinking about … being high in fat and salt and sugar …"
>
> - Implementation stakeholder (TfL).

Educating advertisers as well as the creative agencies responsible for developing advertisements was seen as an important step in addressing this issue.

The exceptions process, and consideration of the context and placement of HFSS food as incidentals, allowed for discretion and nuance in determining whether specific advertisements were appropriate for the TfL estate. However, there was concern among some implementers that this flexibility both introduced loopholes and risked undermining the NPM. Moreover, some were also concerned that approaches designed to make the policy appear more 'sensible' were not consistent with the science underpinning the policy and were often guided by the opinions of implementation stakeholders who were not experts in food and nutrition. For example:

> "… with food, everyone thinks they're an expert because they eat. So, so you get all these … people who are, you know, really well educated … will then say, 'oh but butter, bacon, yeah but you know I eat it,' essentially and that informs their policy decision or, or how likely they are to support the policy."
>
> - Implementation stakeholder (GLA).

Despite these challenges, several implementation and industry stakeholders reported that commercial actors had acclimatized to the new policy and implementation stakeholders highlighted tangible changes they had observed in advertisements on the TfL estate since the policy came into effect. For example, a media buyer who helps to place advertisements observed that among their clients, "I think it's just standard practice now and kind of common knowledge … what is and isn't allowed." As a GLA stakeholder observed, "I think in general when you look around the network you see much less food that one might consider to be junk food …" Another highlighted emerging effects as an important first step in a complex process which can be improved over time:

> "… what I've learned also is that you might want to get to a perfect place but actually to get there there's a number of different steps to get there. And … if you think of the absolute numbers of all the junk food adverts have produced … actually don't lose sight of the overall aim and so don't let the perfect be the enemy of the good … And what I've learned through this whole process is that there's been immense careful consideration and thought that's gone into this and we can't envisage everything. But what I'd say is that we are, erm, what I'm quite proud of is that we've got somewhere and actually I think in the future it might be more refined and it might be that perfect version but, er, don't lose sight of that."
>
> - Implementation stakeholder (GLA).

3.3.3. Legal considerations relating to policy implementation

Developing a policy that would fit within existing legal frameworks, and that would not be vulnerable to legal challenges, was a key concern among GLA and TfL stakeholders, who worked closely with legal advisors to do so. Inconsistent application of the policy was viewed as an important risk. However, there was recognition that this concern needed to be balanced with commercial and political considerations:

> "We tried to establish a policy that was workable on a consistent basis but would still leave perhaps some reasonable discretion to those applying the policy, so which would … enable reasonable but consistent decisions to be taken, without it being … possible for someone to say that we were being irrational, unreasonable or unfair."
>
> - Implementation stakeholder (TfL).

Addressing the challenge of ongoing advertising contracts that were signed before the new policy came into effect, implementation stakeholders reported that the new guidelines were integrated into TfL's existing advertising policy, which individual contracts reference and which could be changed. In this way, restrictions on HFSS advertising were added to other existing restrictions (e.g., those prohibiting the advertisement of weapons of mass destruction) and could be implemented across all existing and new contracts. The new policy also built on existing processes within TfL for reviewing advertisements for suitability in terms of weapons, violence and sexualisation, adding what an industry stakeholder described as "another layer on top of" existing review procedures.

This approach of building upon existing policy was also evidenced in other aspects of the new guidelines. The NPM already had "credibility", as one TfL stakeholder described, and was therefore selected as the primary measure for assessing products for advertising on TfL. Furthermore, stakeholders reported that the policy was developed and refined so that the exceptions process would take into account whether products were targeted in existing UK food policy initiatives (calorie reductions categories (Pyne et al., 2020), the soft drinks industry levy (HM Revenue and Customs, 2018) or other sugar reduction strategies).

3.3.4. Differential impacts on industry stakeholders

Participants reported that alternative advertising options and the impact of the policy differed for different industry actors. For example, implementation and industry stakeholders highlighted that food-delivery platforms (Hirschberg et al., 2016), who often advertise using generic examples of popular foods, rather than branded products, faced challenges others did not in nutritionally profiling their products. Policy implementers were not satisfied with the accuracy of nutritionally profiling generic images. However, industry stakeholders argued that availability of specific products varied by location; for example, a dish available from a local restaurant at one end of a public transport route might not be available at the other. They also reported facing challenges obtaining the exact nutritional content of the products advertised on their platforms, as they were often from the independent sector as opposed to from chains. Participant accounts suggest that, for the moment, this has been resolved by building up a database of specific, non-HFSS products which could be advertised. Although, a food delivery brand stakeholder suggested this might not be a sustainable long-term solution, particularly if the policy were to be adopted beyond London:

> "Well, so we might want, for example, to have an advert that has a picture of a curry on it. And that needs for us, in order that we can do it once and print it thousands of times across the TfL network, that needs to be something whereby the message is universal, and isn't, doesn't have to be specific to a particular part of London, or specific to a particular restaurant. When we're in the position whereby it does have to be specific to a particular restaurant, then that means two things. First of which, it means that geographically, as I said earlier on, you lose relevance. But also, if we were to have to come up with multiple versions of this within London, but also, were this policy to extend out beyond London, looking to create thousands and thousands and thousands of photographs of food, and then nutritionally profile at an individual restaurant level, the overhead from us, from a resource and from a cost point of view would be huge."
>
> - Industry stakeholder (food delivery brand).

Others highlighted uneven impacts on brands and advertising stakeholders – particularly those with a narrower product portfolio. For example, brands focused on confectionary might not have any non-HFSS products to feature and would therefore be unable to advertise on the TfL estate, while those advertising a more diverse range of products would be able to replace HFSS advertisements with those for non-HFSS products. Similarly, media sellers who owned or managed more non-TfL holdings in London would be better positioned than those with a narrower portfolio to mitigate the policy's impact on their business by moving their clients' HFSS advertisements to other locations.

3.4. Political factors

3.4.1. Striking a balance between health and TfL commercial viability via advertising income

Implementation and industry stakeholders voiced tension between the goals of implementing a new policy to promote health and maintaining the commercial viability of advertising with TfL, considering the financial position of TfL itself. While there was broad agreement that it would be difficult to accurately calculate the financial impact on TfL, there was still a great deal of interest in understanding what the nature of any financial impact might be.

TfL was recognised as being in a somewhat difficult position. While responsible for administering and implementing the policy, TfL had no control over its development and had to navigate its enforcement, even though this may be in conflict with their strategic remit of maximising revenue for reinvestment into public transport. Concerns about potential loss of revenue for TfL were often cited by GLA and TfL stakeholders. As a TfL stakeholder described,

> "I think there's a want to get behind this policy and support it, [but] there's a fear about the impact on revenue and the perception of TfL

advertising within the marketplace and what it's meant to do to our brand."

- Implementation stakeholder (TfL).

Highlighting the critical role of commercial advertising in generating revenue for the network, a GLA stakeholder suggested this tension played into the need for the above-mentioned exceptions process.

Both implementation and industry stakeholders raised the possibility that some advertisers would opt to advertise in locations that do not operate HFSS restrictions rather than on the TfL estate. Some suggested that, comprising a relatively small proportion of available UK advertising space, TfL's influence was limited:

"… it becomes so complex for an advertiser having to, having to go to create a, a different creative TfL, a different creative for Southwark and Lambeth because they want to ban in a different way. A different creative for West Midlands Transport, er, a different creative for Manchester, a different creative for the whole of Scotland, er, you're going to see advertising just going, advertisers just going, 'we'll sacrifice the TfL estate as we can't, we can't do it.'"

- Industry stakeholder (industry body representative).

Participants cited examples of advertisements that were pulled (by advertisers) or rejected (by implementers) from the TfL estate as well as examples of modifications made to successfully bring advertisements into compliance. A GLA stakeholder suggested that, in some cases, these changes had a ripple effect on advertisements in other locations when these were part of a broader campaign:

"They're amending their brand-only … adverts to comply and, erm, financial services companies are not using pictures of cake anymore, they're using other pictures which, you know, as long as they know what the policy is, it's been fine and, and a lot of places I think the national, copy for their national campaigns has been amended to meet our policy because actually they don't need to use that picture of a cake, they can use something else, be a bit more creative."

- Implementation stakeholder (GLA).

3.4.2. *Public perception and political considerations*

Stakeholders suggested that to be acceptable, the policy would need to be designed such that it could be implemented consistently and in a way that would pass "the reasonableness test." Implementation stakeholders emphasised the critical importance of the public perceiving the policy as "common sense," which presented difficulty when an NPM assessment of product healthiness conflicted with public perceptions of what constitutes 'junk food.' There was concern that the rejection of advertisements for foods that the general public perceived as not harmful would undermine the policy and result in public backlash. An earlier analysis of media coverage of the ban revealed that focusing on specific foods that were banned – or not banned – was the most widely reported aspect of the policy. In some cases, HFSS foods were described affectionately as traditional (like jam or butter) and the banning of them as inappropriate and unfair (Thompson et al., 2021).

Public perceptions of policy and communication efforts to bolster and maintain public support emerged as a prominent theme among implementation stakeholders. This was highlighted as a particularly important concern for the office of the Mayor of London, which introduced and championed the policy. In the formative stages of policy development, initial public consultation was described as important for determining the level of public support for the policy, which was found to be high. Care was also reportedly taken to ensure that the office of the Mayor was not seen to be anti-business:

"[The Mayor] wants economic growth, he wants businesses to grow but in a good way. It's about good work, it's about good employment, good practices and it's not … increasing the bottom line at any cost."

- Implementation stakeholder (GLA).

Implementation stakeholders suggested that negative media coverage was impossible to avoid; focusing on developing a robust policy was seen as key to implementing durable transformational initiatives.

While some participants viewed the exceptions process as driven by a combination of industry interests and concern for public perception, it was also framed as key tactic in pushing back against industry opposition and playing a role in the policy's successful launch:

"… and I think that it probably did have the effect of ensuring that the policy, when it launched, launched really, it landed really well … by having the exemptions option within the policy, took the rug out under the feet of the naysayers a bit, because you know it wasn't saying, there's no way that any of your products will be advertised it's, well saying well, they need to pass the nutrient profiling, but and unless you can make a really good case. So it, I think tactically, it supported a good launch for the policy."

- Implementation stakeholder (GLA).

Both industry and implementation stakeholders expressed frustration with what they perceived as politically motivated influences on the initiation, development and implementation of the policy. Several industry stakeholders reported skepticism about the motivation for the policy or for the speed of its implementation, with some describing it as a "legacy project" or "political statement" that lacked a sufficient evidence base. As one participant put it,

"… without being too harsh on the Mayor, it's a political statement to say here, I can take direct action, I've done something, but it's maybe not the most effective thing, but it's an easier thing to do. I think that was probably a concern, which I think we, we have, it's hard to write that down so explicitly, but it's on everyone's mind."

- Industry stakeholder (industry body).

Implementation stakeholders also acknowledged the influence of political factors, describing the policy as "highly political" and acknowledging that any policy initiative must take into account not only values and ethics, but also the potential for and cost of anticipated backlash. Still, they frequently expressed frustration with navigating the office of the Mayor's concerns about backlash and negative press, and their worry that the Mayor would reconsider his commitment to the policy in the face of these challenges and an upcoming bid for re-election. As one participant described,

"Well, I realised that we're in a political environment and what we didn't want to happen was lots of items that the general public don't see as a problem being on the front of the newspapers and almost undermining the true aim of the policy of, you know, getting rid of the really bad stuff in some ways. And what we didn't want to happen was the Mayor to have a really hard time in the newspapers and for him to lose complete interest in the policy and give up."

- Implementation stakeholder (GLA).

Some participants felt that political motivations could overshadow the science underpinning the policy, in some cases weakening the policy in response to undue influence from industry lobbyists. Similarly, participants suggested that public appearances where the Mayor was "put on the spot" with queries about specific products or campaigns could pose challenges, with one participant suggesting that "offhand" public comments from the Mayor could sometimes influence the direction of the policy, presenting a challenge to the judgement of those with more specialist knowledge of the nutrition field:

"We actually I mean at meetings had discussions about shifting it in different directions because the Mayor made some offhand comment in a[n] interview, you know, I mean that's crazy because, you know … there's no way that you can write policy around offhand

comments that someone who is not, you know, is not up on the latest in nutrition or food policy is making."

- Implementation stakeholder (GLA).

4. Discussion

This process evaluation aimed to explore the development and implementation of TfL's restrictions on the advertising of HFSS products across their network. Our analysis revealed that the development, design and implementation of the policy was influenced by practical and political factors. Our findings suggest that consultation during the policy development stage, close communication with industry stakeholders, building on existing legal frameworks and the development of an exceptions process facilitated the process of developing and implementing the policy. Implementers also faced challenges stemming from practical and political issues. In practical terms, using the NPM to classify 'junk food' was seen as beneficial as it drew on an existing, credible tool. However, the tools available for determining what is an HFSS product can produce policy anomalies. The NPM was developed and tailored to assess foods in television advertising (Department of Health, 2011). When utilised to support TfL's policy, considerations around portion size, identifying what products might be aimed at children, how to treat food products that appear incidentally in advertisements for non-food products, and how to deal with advertisements for delivery platforms, all needed to be addressed.

The exceptions process was a key mechanism through which several of these challenges were addressed, and was perceived as helping industry navigate the policy as well as decreasing resistance towards it. In terms of its incorporation into TfL's policy, our findings suggest that the exceptions process was informed in part by concerns raised by industry stakeholders, reflecting the results of a recent systematic review which found that the adoption of obesity prevention policy is facilitated by political systems that provide opportunities for stakeholder input when making regulatory decisions (Clarke et al., 2016).

However, there was concern among some implementers that the flexibility offered by the exceptions process risked undermining the policy and was not always consistent with the science underpinning it. From the outset, the policy was political and controversial and attracted a high degree scrutiny from industry and the media. Success of the policy hinged upon striking a balance between health and commercial viability, specifically advertising income considerations, though concerns around commercial viability were later discovered to be unfounded as TfL reported that there has been no impact of the policy on advertising revenue (Sweney, 2021). Public perception, media coverage, and maintaining public support were ongoing concerns that further complicated the development and implementation processes.

Both implementation and industry stakeholders were critical of the influence of political considerations on the policy. For implementers, there was concern that the policy might be watered down, comprising impact. In contrast, industry stakeholders were concerned that political pressures meant the policy was pushed through without sufficient evidence in support, resulting in restrictions that were too harsh. To add context here, the political leanings of The Mayor (a Labour party candidate) traditionally supports a more interventionist approach compared to more non-interventionist conservative politicians. Sociopolitical context often positions upstream public health interventions and industry interests in opposition to each other (McKinlay and Marceau, 2000). These tensions are evident in the accounts given here, and suggest closer alignment of policy and industry goals may be useful. The fact that both implementation and industry stakeholders were concerned that the policy didn't fully accommodate their priorities or concerns could be interpreted as an indication that it struck a successful balance. However, industry actors are often invested in avoiding regulation and typically have substantial resources to do so (Adams et al., 2016). Overall, despite the identified challenges, the policy appears to have been implemented effectively and industry stakeholders were able to comply with the new restrictions. Added to which, public health interventions that target industry tend not to result in long-term negative impacts for industry (Larcker et al., 2011; Law et al., 2020).

Childhood obesity is the product of a wide range of complex causal mechanisms operating at a variety of levels (Swinburn et al., 2011). Many of these originate upstream, and as such, require population-level interventions in order to tackle them (Swinburn et al., 2011). At present, public health evidence tends to focus on "downstream" individual-level behaviour change interventions, which are easier to study but tend to produce only short-term benefits (Cairns et al., 2013; Knai et al., 2018). Population-level interventions are also considered by some to be synonymous with limiting free choice (Frieden, 2010), and as such, there is a perception that they are less acceptable to some stakeholders, notably politicians, the public, and the food industry (Adams et al., 2016). In this study, participants initially had concerns about securing and managing public acceptance of the policy. However, public consultation in the formative stages of policy design found that it was popular with the public, and implementers were mindful of maintaining public support in the face of criticism by industry and the media (Thompson et al., 2021). That the intervention targeted children was the main selling point of the policy to the public, both in terms of the rationale for the policy and how the exceptions process was designed and managed. This finding supports work that suggests interventions targeting children and young people typically attract the most public support (Diepeveen et al., 2013) and are therefore important policy considerations.

Practical issues with using the NPM to operationalise the TfL policy have been encountered elsewhere. Jenkin et al. (2008) suggest that consideration should be given to the categorization of condiments and ingredients in order to either exempt them altogether or make them subject to different rules, thereby avoiding controversies over 'banning' them. Nutrient profiling models do not come with recommendations about how to apply them to real-world advertising policies and so implementers have to make their own judgments on whether and how to adapt them. Additional contextual decisions have to be made on how strict the regulation should be and which food categories are broadly 'healthy' or 'unhealthy' (Scarborough et al., 2013). In addition, use of the NPM does not allow consideration of brand-only marketing within the design of the policy. Brand-only marketing has shown to be associated with brand awareness and brand loyalty and may be a driver of product purchases from these brands, irrespective of whether products themselves are advertised (Gabrielli et al., 2021; Fischer et al., 1991). As we have discussed elsewhere (Thompson et al., 2021), tools such as the NPM are works in progress that need to be updated and modified for specific uses and contexts. Previous research has suggested that the NPM is not always a consistent discriminator of what constitutes a less healthy product (Mytton et al., 2018). A key lesson for policy is that, in the short-term, there is a need to develop processes to better accommodate the nuances surrounding the implementation of specific policies (i.e. in the case of TfL, the exceptions process) and longer term, develop better tools that allow for a better and more consistent categorization of HFSS and other less healthy products.

4.1. Lessons for implementation

Our findings suggest that the policy was effectively implemented and commercial stakeholders quickly accepted and adapted to its requirements. As similar policies are currently being considered or implemented elsewhere (Postans, 2021), there are several lessons for successful implementation that may help navigate practical problems, allay political and industry concerns, and maximise potential public health gain (see Box 2). Many of these lessons outlined below may also have utility as generalisable strategies that could be applied across a wider range of population-level interventions, especially for policies that involve regulation and involve public and industry stakeholders. Legal considerations, public engagement and consultation with industry

Box 2
Lessons to inform stakeholders when implementing policies restricting the advertisement of HFSS foods and beverages.

- Ensure that the policy complies with existing legal frameworks and contracts early in the policy development process
- Conduct a public consultation of the policy and publish the response to submissions to ensure transparency and accountability to policy-making process.
- Engage early with industry to understand practical concerns around implementation (e.g., timing of advertising, advertising content).
- Ensure the policy maintains a level playing field for different industry stakeholders.
- Consider adaption of processes that use existing tools to define HFSS products (such as the NPM) by having supplementary evidence-based criteria to help achieve policy goals (e.g., recommended portion size, recommended calories per meal) or by having a decision-making body to consider specific products (e.g. the exceptions process).
- Establish a transparent and consistent process for making compliance decisions on specific products that may or may not fall within the aims of the policy, dedicating the time and resource required for this to be sustainable.
- Consider a consistent process for addressing non-standard products. For example, 'generic' or 'model' representations of foods and beverages; or products/meals that are produced in non-standardised ways by small businesses that do not have the resource to undertake nutritional profiling.
- Ensure the policy passes a 'reasonableness' test in order to maintain support from policymakers, industry and the public. Develop and maintain consistent messaging and take steps to pre-empt media critiques.
- Allow flexibility to change and adapt the policy over time in response to emergent challenges.

were seen as central. In addition, crafting a policy that can be implemented in a transparent and consistent way that is perceived as 'fair' by industry stakeholders, and as 'reasonable' by the public – while allowing for adaptations in response to implementation challenges – was essential.

4.2. Strengths and limitations

This paper adds to the evidence base on the implementation of complex interventions and policies to address childhood obesity (Knai et al., 2018; Rutter et al., 2017). The intervention involved a wide range of actors from across multiple sectors, and we recruited from a diverse pool of stakeholders to generate a robust account of the policy process. However, limitations on fieldwork capabilities due to the COVID-19 pandemic prevented us from directly exploring public perception of and views on the policy. Additionally, it is possible that participants' responses could be influenced by the interviewer's identity as a public health researcher. However, participants shared both positive and negative reflections and findings were often similar across industry and implementation stakeholders, suggesting that participants were candid in their responses.

Though our analysis of the implementation of advertising restrictions on a transport network was in one city, thus limiting generalisability, the policy has attracted interest from local and national government elsewhere in the UK and internationally, and potentially provides insight into the optimisation of policy in other jurisdictions.

5. Conclusions

Designing and implementing restrictions on the advertisement of HFSS foods, especially to children, is high on the public health policy agenda both locally and nationally, but is not without challenge. These challenges may be political as well as practical and require careful thought at the design and planning stages in order to pre-empt criticism and allow for smooth policy implementation. Key to policy success was the ability of commercial stakeholders to quickly adapt to restrictions, and this was facilitated by the existence of a process where specific products on the boundary of the policy could be assessed for compliance. Overall, this paper demonstrates that policies and interventions aimed at restricting the outdoor advertisement of HFSS foods and beverages at scale are highly feasible. For optimal implementation of similar future policies, and to maximise potential public health gain, implementers should consider the recommendations outlined above. This might include a particular focus on adapting existing tools to better define HFSS products by considering portion size, total calories of advertised product and the salience of products to children.

Appendix 1. Codes and themes

Theme	Codes
- Operationalising junk food	•NPM
- Clarity and guidance	•Incidentals
- Law and legal	•Food aggregators
- Mismatched sectors and skills	•Fake food
- Exceptions panel/process	•Portion sizes
- Stakeholder strategies	•Salience to children
- Working with Industry	•Policy guidance
- Time pressures	•Compliance
- Health	•Communication
- Perceptions and framing	•Legality of 'junk food'
	•Timing
	•Changes
	•Challenges
	•Conflicting agendas
	•'outside my expertise'
	•'off the cuff' vs food science
	•Uneven impacts

(*continued on next page*)

(*continued*)

Theme	Codes
	•Arguments for •Arguments against •Consistency/integrity •Setting a precedent •The application process •'Trade off' •Not reinventing the wheels •Over the line •Levers for change •Modification/adaptation •Advertising elsewhere •Policy development •Policy implementation •Tight turnarounds and deadlines •Resource-intensive •'Box ticking' •Pragmatism/compromise •Health inequalities •Obesity •'The science' •'Outside of remit' •(in relation to) maximising revenue •Public opinion •Public scrutiny •Press coverage •The Mayor •'Scoring political points' •Backlash •Legacy

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