



BMJ Open Mechanisms for addressing and managing the influence of corporations on public health policy, research and practice: a scoping review

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ABSTRACT

Objective We identified mechanisms for addressing and/or managing the influence of corporations on public health policy, research and practice, as well as examples of where these mechanisms have been adopted from across the globe.

Design We conducted a scoping review. We conducted searches in five databases on 4 June 2019. Twenty-eight relevant institutions and networks were contacted to identify additional mechanisms and examples. In addition, we identified mechanisms and examples from our collective experience working on the influence of corporations on public health policy, research and practice.

Setting We identified mechanisms at the national, regional and global levels.

Results Thirty-one documents were included in our review. Eight were peer-reviewed scientific articles. Nine discussed mechanisms to address and/or manage the influence of different types of industries; while other documents targeted specific industries. In total, we identified 49 mechanisms for addressing and/or managing the influence of corporations on public health policy, research and practice, and 43 of these were adopted at the national, regional or global level. We identified four main types of mechanisms: transparency; management of interactions with industry and of conflicts of interest; identification, monitoring and education about the practices of corporations and associated risks to public health; prohibition of interactions with industry. Mechanisms for governments (n=17) and academia (n=13) were most frequently identified, with fewer for the media and civil society.

Conclusions We identified several mechanisms that could help address and/or manage the negative influence of corporations on public health policy, research and practice. If adopted and evaluated more widely, many of the mechanisms described in this manuscript could contribute to efforts to prevent and control non-communicable diseases.

Trial registration details The protocol was registered with the Open Science Framework on 27 May 2019 (<https://osf.io/xc2vp>).

Strengths and limitations of this study

- This review is the first attempt to develop an inventory of mechanisms for addressing and managing the influence of corporations on public health policy, research and practice.
- Many of the mechanisms identified in our review have been developed with no restriction on the type of industries targeted.
- The list compiled here is non-exhaustive and by nature, subject to changes, as an increasing number of governments and other institutions take measures to prevent undue influence from industry.
- Not all mechanisms have yet been thoroughly evaluated; therefore, we did not assess the validity of the included studies.
- Mechanisms at the subnational level have not been included in our study.

BACKGROUND

There is growing evidence, coupled with public awareness, that the economic power of corporations, particularly that of large transnationals, has led to the defeat, delay and weakening of public health policies around the world.^{1–3} Perhaps the best evidence of the harmful influence of corporations on public health policy is in the field of tobacco control. In the 1990s, during litigation in the USA, leading tobacco companies released large quantities of internal documents,^{4,5} revealing how, over decades, they sought to deny the threat that tobacco posed to health and to thwart measures to reduce smoking.^{6–8} Recent research has shown that influence of tobacco industry has resulted in a policy shift towards industry interests in some regions, such as the European Union.⁹ Tobacco continues to kill millions.¹⁰ An emerging body of evidence is revealing the use of similar corporate efforts to defeat, delay and weaken the public health



policies and influence research and practice, from a range of sectors including the alcohol, food, gambling, oil and pharmaceutical industries, among others.^{1 11–15} These corporate practices that have a negative impact on health, and that are used across industries, are increasingly referred to as ‘commercial determinants of health’ in the literature.¹⁶

Industry efforts to influence public policy, research and practice are often referred to as ‘corporate political activity’ (CPA). The CPA includes: coalition management (influence on third parties such as health organisations, communities and the media); information management (manipulation of the evidence base, through the funding of research, ghost-writing, and so on); direct and indirect involvement in policy-making; litigation or the threat of legal actions; and discursive strategies seeking to frame the dominant narrative in their favour.⁸

Several institutions have been established to monitor the influence of corporations on public health policy, research and practice, such as Corporate Europe Observatory in Europe and US Right to Know in the USA (see online supplementary file 1 for a non-exhaustive list of such organisations). Major reviews of the determinants of health also increasingly and explicitly examine the influence of corporations on public health policy, research and practice.³ Approaches have recently been developed to analyse this influence systematically. The ‘Corporate Permeation Index’ developed by Lima and Galea measures “the extent to which corporations are embedded in the political, legal, social, economic and cultural fabric of a country”.¹⁷ This index seeks to quantify the penetration of corporations in a given country, and was recently implemented for 148 countries over the period 2010–5.¹⁷ The results showed extensive international variation.¹⁷ The WHO, as well as institutions in academia and civil society, have made recommendations to identify and monitor the influence of the tobacco industry on public health policy, research and practice.^{18–20} Mialon *et al* built on this work and developed a step-by-step approach to monitor the CPA of the food industry within countries, using publicly available information.¹¹ To date, the approach has been implemented in more than 20 countries.^{21–27} One commonly identified drawback of such approaches is that they are limited by a lack of relevant and comprehensive publicly available information for most industries other than tobacco, where millions of internal documents are now freely available to the public.^{21 23 24 27} Evidence of this influence for other industries is typically sparse and not systematically compiled. It is obtained from a range of sources, including internal documents, primarily leaked by whistle-blowers, publicly available information (eg, from media releases, companies websites, data on lobbying, and so on) and interviews with those who interact with these companies.

National health authorities and civil society organisations have increasingly been concerned with the weakening, delay and obstruction of public health policies due to harmful corporate practices.^{2 28 29} There is also

increasing awareness and acceptance among the public health community, particularly in high-income countries, that interactions with these industries require extreme caution, and, at the minimum, transparency coupled with a detailed understanding of their mode of operation.^{30 31}

The public health community looks for inspiration to the WHO Framework Convention on Tobacco Control (FCTC),³² with recent calls for a Framework Convention on Food Systems (FCFS)³ and a Framework Convention on Alcohol Control (FCAC).³³ Article 5.3 of the FCTC bars any interactions between governments and the tobacco industry except for implementing tobacco control, led by public health officials.³² As of December 2018, 181 countries had ratified the WHO FCTC, covering 90% of the world population.³⁴ The extent of implementation of key FCTC regulatory measures in countries is significantly associated with lower smoking prevalence.³⁵ However, the tobacco industry, often through pseudo-scientific front groups, still wields influence that allows it to avoid or water down regulatory initiatives.³⁶

The demand for mechanisms to protect the policy process from undue corporate influence is growing. One example of how this became evident is when, in 2012, Member States requested the World Health Assembly (Resolution WHA65.6) to develop risk assessment, disclosure and management tools to safeguard against conflicts of interest (COI) in policy development and implementation of nutrition programmes.³⁷ The WHO also recently declared that it would no longer partner with alcohol industry actors during the development of policies to reduce harmful drinking.³⁸ The need for guidance on how to address and manage undue influence from corporations is also evident in research and practice.^{39 40}

Identification and monitoring of the industry influence on public health policy, research and practice is a necessary but insufficient step in protecting and promoting public health. It is essential that international organisations, governments, academia, the media and the civil society are equipped to tackle potential threats to global health. Our study objective was, therefore, to identify mechanisms for addressing and/or managing the influence of corporations on public health policy, research and practice, as well as examples of where these mechanisms have been adopted.

METHODS

We conducted a scoping review, where we searched scientific publications (peer-reviewed articles, letters to the editor, commentaries, and so on) and reports from governments, international organisations and civil society. We excluded books, as well as presentations from conferences, and other events where no full articles were available.

A scoping review was deemed to be the most suitable method for this study as we intended to summarise evidence from a heterogeneous body of research, from academia, governments, civil society organisations and

other actors in public health.⁴¹ A scoping review also advances knowledge in an emerging field of research, which is the case for mechanisms to address the influence of corporations on public health.⁴¹ In addition, it helps examine the nature of available research and research gaps in the literature, which could inform future research.⁴¹

We used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Extension for Scoping Reviews (PRISMA-ScR, see online supplementary file 2) to prepare our scoping review protocol and our manuscript. The protocol was revised by the research team and registered with the Open Science Framework on 27 May 2019 (<https://osf.io/xc2vp>).

In our scoping review, the term ‘mechanism’ refers to: policies, regulations, guidelines, codes of conduct, frameworks, standards, initiatives or other tools to address and/or manage the influence of corporations on public health policy, research and practice.

The terms ‘industry’ and ‘corporations’ are employed interchangeably in this manuscript to refer to the manufacturers, wholesalers, retailers, distributors, food service providers, as well as producers of raw material. We also include those organisations acting on their behalf, overtly or covertly, including some trade associations, public relations firms, ‘philanthropic’ organisations, research institutions and other individuals and groups.

Database searches

Search strategy

The development of the search strategy was informed by previous systematic and scoping reviews that analysed the influence of corporations on public health policy, research and practice^{7 12 13} or that presented mechanisms to address and/or manage that influence (for the food industry, for example⁴⁰). We used keywords and Medical Subject Headings (MeSH) terms. The search strategy was developed with the help of a librarian at the University of Antioquia, Colombia.

We conducted systematic searches in five databases:

- ▶ Web of Science Core Collection (Web of Knowledge interface);
- ▶ BIOSIS (Web of Knowledge interface);
- ▶ MEDLINE (Web of Knowledge interface);
- ▶ Embase (Embase interface);
- ▶ Scopus (Scopus interface).

The terms used in the search strategy were tailored to the requirements of each database and included ((corporat* or industr* or compan* or business* or firm*) AND (address* or manag* or ‘guid*’ or ‘codes of conduct’ or framework* or standard* or governance)). In addition, we searched the following key terms in the titles only, as a broader search yielded too many irrelevant results: ((diet or nutrition or food or obesity or alcohol or drink or pharma* or gamb* or tobacco or smok* or cigarette* or oil or ‘public health’) AND (interact* or conflict* or ‘public*private’ or poli* or legislat* or lobb*)).

Our search strategy for Web of Science Core Collection (Web of Knowledge interface) was:

TO= ((corporat* or industr* or compan* or business* or firm*) AND (address* or manag* or “guid*” or “codes of conduct” or framework* or standard* or governance)) AND TI= ((diet or nutrition or food or obesity or alcohol or drink or pharma* or gamb* or tobacco or smok* or cigarette* or oil or “public health”) AND (interact* or conflict* or “public*private” or poli* or legislat* or lobb*))

Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCIS, CPCIS-SH, BKCI-S, BKCI-SH, ESCI, CCR-EXPANDED, IC Timespan=2003 to 2019

The search strategies for other databases are presented in online supplementary file 3. Databases were searched on 4 June 2019.

Eligibility criteria

To be included in this review, publications had to:

- ▶ Be published in 2003 and later, when the WHO-FCTC came into effect;
- ▶ Be published in English, French, Spanish, Portuguese, or Italian—languages for which members of our team had at least working proficiency;
- ▶ Analyse, use, compare, propose or evaluate one or several mechanisms for addressing and/or managing the influence of corporations on public health policy, research and/or practice;
- ▶ Focus on the influence of the alcohol, food, gambling, oil, pharmaceutical and/or tobacco industries on public health policy, research and practice;
- ▶ Focus on mechanisms at the international, regional (eg, Europe) or national level.

Selection of sources of evidence

All citations identified were downloaded and imported to the web-based bibliographic manager F1000 Workspace, where duplicate citations were removed. Data extraction and analysis were led by the first author. MM screened all titles and abstracts, when available, for eligibility. GS double-screened 10% of the material. MM then obtained the full-texts of potential eligible material. When publications were not available online, MM contacted the first authors of the materials to obtain a copy of the documents (n=13). MM assessed the eligibility of that material against the eligibility criteria. GS assessed the eligibility of 10% of the documents. Disagreement was resolved by consensus after discussion between MM and GS. For documents that were included in our review, MM searched their bibliographic reference sections (backward searches) and searched documents that were citing them; using Scopus (forward searches) to identify additional relevant material.

Additional searches

Twenty-eight institutions and networks working on the industry influence on public health policy, research and practice, as detailed in online supplementary file 1, were

contacted in May 2019 to identify additional mechanisms and examples. These institutions were identified through the authors' networks. Only one of these institutions answered our requests. In addition, we identified mechanisms and examples of their adoption from our collective experience working on the influence of corporations on public health policy, research and practice.

We included documents from the grey literature, including from international agencies (eg, WHO, World Bank, and so on), national government agencies, universities, academic journals, international professionals associations, the media, research funders and civil society organisations.

Data charting process and data items

Data was charted by MM in an Excel table, and the variables for which data were sought were:

- ▶ Whether or not the study was funded by corporations or had authors that were employed by corporations in the alcohol, food, gambling, oil, pharmaceutical or tobacco industries (as disclosed in the documents identified through our searches);
- ▶ Individuals and institutions targeted by the mechanism: governments and international organisations (with details about specific institutions targeted by the mechanisms within these organisations); academia (including researchers, universities, scientific journals, research funders, ethics review boards, and so on), the media and the civil society;
- ▶ Details about the mechanism for addressing and/or managing the influence of corporations on public health policy, research and practice, including the type of mechanism described;
- ▶ Information about specific examples where the mechanism has been adopted, either fully or to some extent, including the name of the country, the name of the policy and the URL.

Synthesis of results

We identified four broad types of mechanisms for addressing and managing the influence of corporations on public health policy, research and practice, through our interpretation of the data, and as presented at the beginning of our results section. Most mechanisms identified in this review pertain to one or more of these four broad categories

We present the results of our review in two tables: one table with mechanisms for governments and international organisations and one table with mechanisms for academia, the media and civil society. We decided to first present data for individuals and institutions in governments as they may have a legal obligation to address undue influence from corporations and conflicts of interest, while this might not be the case for other actors in public health.

We then grouped each mechanism by institution (ministries, universities, academic journals, and so on), in no specific order. Where multiple mechanisms targeting

particular aspects of corporate influence were identified, we only included the most stringent mechanisms, as determined by ourselves.

We also include examples where these mechanisms have been adopted, fully or to some extent, as identified in the documents collected during our systematic searches or as identified through additional searches. The URLs for the examples included in our scoping review are available in online supplementary file 4. We made a particular effort to represent a broad range of countries from different regions of the globe in these examples, although our list is non-exhaustive.

Exclusion criteria

We excluded documents funded by corporations or whose authors were employed by corporations in the alcohol, food, gambling, oil, pharmaceutical and tobacco industries (as disclosed in the documents identified through our searches), as these represented an inherent COI in the development of mechanisms to address and/or manage the influence of these industries.

In our analysis, we excluded mechanisms:

- ▶ that were proposed or developed by the industries mentioned above when these were presented among other mechanisms in non-industry funded documents (eg, reports from multi-stakeholders platforms);
- ▶ only addressing marketing practices, for example:
 - the sponsorship of sport;
 - the interactions between pharmaceutical companies and doctors, pharmacists and other healthcare professionals (including during their training) when those have the sole purpose of selling products.
- ▶ targeted at corporations for managing their interactions with government, academia, the media and the civil society;
- ▶ targeting corporate practices that are almost universally illegal, such as criminal activity and bribery of government officials, although we recognise that these other forms of influence exist. These are beyond the scope of this manuscript.

We also excluded documents that did not analyse, use, compare, propose or evaluate a mechanism per se, but instead discussed its adoption in a specific context (for example the adoption in nine countries of a transparency policy for the interactions between healthcare professionals and the pharmaceutical industry⁴²). In this case, we used these examples in our results section to illustrate instances where a mechanism was adopted.

Patient and public involvement statement

Patients and the public were not involved in this research.

RESULTS

The PRISMA flow diagram for our scoping review is presented in figure 1. In total, 2015 documents were identified in the databases searches (excluding duplicates).

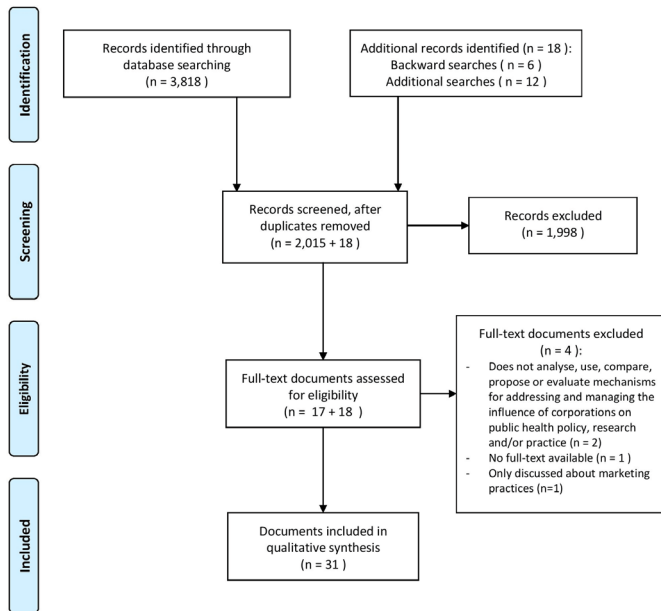


Figure 1 PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flow diagram.

After screening of their titles and abstracts, 1998 documents were excluded and 17 were included. In addition, 6 documents were identified through backward searches and 12 documents were found through additional searches. No new documents were identified through forward searches. In total, 35 full-texts were included for analysis. Subsequently, two articles were excluded because they did not present mechanisms for addressing and/or managing the industry influence; one article was excluded because we could not retrieve its full-text, despite contacting its first author; and one article was excluded because it only discussed marketing practices.

In total, 31 documents were included in our scoping review. All references included in our scoping review came from high-income countries, in particular the USA (n=9). Eight documents were published by international organisations based in France, Switzerland and the USA. Only eight documents were peer-reviewed articles. Other documents included letters to the editors, commentaries and other pieces in scientific/clinical journals, as well as reports by national and international organisations. Nine documents discussed mechanisms to address and/or manage the influence of all sorts of industries. The other documents targeted specific industries (these categories are not mutually exclusive): six for the alcohol industry; seven for the food industry; five for the gambling industry; five for the pharmaceutical industry; and six for the tobacco industry. None of the documents discussed mechanisms to address and/or manage the influence of the oil industry. Most documents included mechanisms for governments (n=17) and academia (including researchers, universities, scientific journals, research funders, ethics review boards, and so on) (n=13). Three documents proposed mechanisms for civil society and

one for the media. We found many examples where these mechanisms have been adopted, as described below.

Many of the mechanisms identified in our review, as discussed in the sections below, focus on the management of COI. COI provisions might not be sufficient to reduce industry influence and that interactions with industry can be ethically problematic and may influence public health policy, research and practice even when COI policies are not implemented.^{43 44} We identified four main types of mechanisms to address undue influence from corporations (categories are not mutually exclusive): (i) managing the interactions with industry and COI; (ii) increasing transparency about these interactions and COI; (iii) identifying, monitoring and educating third parties in academia, civil society and the media about the practices of corporations and associated risks to public health; and (iv) prohibiting any interaction with industry. There are other types of mechanisms discussed in the literature, such as the protection of whistle-blowers, or mandatory taxes for companies to be used by an independent organisation to fund public health research and practice, as detailed below.

Governments and international organisations

International organisations and governments have a mandate to protect and promote public health. Governments are in charge of the initiation, development, implementation and evaluation of public health policies. As such, they are a primary target of corporations whose profits might be threatened by such policies, during all phases of the policy cycle but in particular during initiation and development of policies.

In our scoping review, we identified 23 mechanisms for addressing and/or managing the influence of corporations on governments and international organisations (table 1).

There are growing concerns about how international organisations, including the WHO, engage with corporations and in response, the WHO has recently addressed some of these concerns, most notably in its Framework for Engagement with non-State Actors (FENSA).^{37 45} There is criticism of FENSA, as it could be interpreted as an invitation for increased collaboration between the WHO and industry, suggesting that this is acceptable if managed as per WHO guidelines.⁴⁶

The Organisation for Economic Co-operation and Development (OECD) published several documents that are relevant for the current scoping review, including guidelines for the management of conflicts of interest.^{47 48} In 2017, it developed a framework for ‘Preventing Policy Capture’.⁴⁹ It also published a series of reports on lobbying regulation⁵⁰ and on the funding of political parties and elections campaigns.⁵¹

The World Bank developed a ‘Public Accountability Mechanisms Initiative’, which includes specific recommendations and “provides assessments of countries’ in-law and in-practice efforts to enhance the transparency of public administration and the accountability of public officials”.⁵²

Table 1 Mechanisms for addressing and/or managing the influence of corporations on public health policy (non-exhaustive)

Individuals and institutions	Mechanisms identified through our scoping review	Type of mechanism				Examples where these mechanisms have been adopted (fully or to some extent)
		Transparency	Management	Identification, monitoring and education	Prohibition	
Ministries and related agencies in charge of health, agriculture, education, environment and trade/industry Parliament and Senate	<p>Public health plan or strategy that explicitly includes the protection of public health policies from industry interests, including the possibility to challenge demonstrable industry influence^{62,63}</p> <p>A set of policies related to conflicts of interest:^{47,48}</p> <ul style="list-style-type: none"> information about whom to accept funding from, based on a risks analysis a clear and realistic description of circumstances and relationships that can lead to a conflict-of-interest⁴⁹ information about how interactions with corporations (and third parties acting on behalf of the industry) and conflicts of interest, both at the individual and institutional levels, will be reported, reviewed, documented, monitored and managed (including restricted, if necessary⁶²⁻⁶⁴), as well sanctions in case of non-compliance with the policy⁶² requirements for government officials to declare and divest themselves of direct interests in specific industries related to health (eg, tobacco industry)^{62,63} restrictions on government institutions and their bodies from having financial interests in specific industries related to health (eg, tobacco industry), unless they are responsible for managing a government's ownership interest in a State-owned company.^{62,63} restrictions on government institutions and their bodies from accepting contributions (financial or in-kind) from specific industries related to health (eg, tobacco industry) or from those working to further its interests, except for compensations due to legal settlements or agreements^{62,63} <p>Officials that should be covered by the above mechanism include: ministers; senior public servants; customs officers; contract managers; prosecutors; tax officials; judges;⁴⁷ procurement officials; ministerial cabinet staff; auditors⁴⁷</p> <p>Public financial disclosure (combination of income, assets, liabilities, business activities and incompatibilities with public mandates) for individuals in government. This would include sanctions if these disclosures are not filled or contain omissions or misleading information⁴⁸</p> <p>Policy on mandatory waiting periods after the termination of employment before individuals from a company that is regulated by a government agency can work in this government agency and vice versa^{48,62,63,65}</p>	X	X	X	X	<ul style="list-style-type: none"> Brazil - Presidency of the Republic - Code of Conduct for Senior Federal Administration Colombia - Congress of Colombia - Law 190 of 1995, article 15 - Regime of civil servants European Union (EU) - Guidelines on the prevention and management of COI in EU decentralised agencies France - Penal Code - Article 432-12 (Individual conflicts of interest) Mexico - Chamber of Deputies of the High Congress of the Union - General Secretary - Secretariat of Parliamentary Services - Law of Administrative responsibilities of civil servants (individual conflicts of interest) Nepal - Tobacco Product Control and Regulatory Directive 2014 - Chapter 3: Controlling Interference in Policy-Making and Implementation - Conduct of Public Agency Officials Philippines: <ul style="list-style-type: none"> Civil Service Commission - Department of Health - Joint Memorandum Circular no. 2010-01 on Protection of the Bureau against Tobacco Industry Interference. Department of Health - Memorandum No. 2010-0126 on Protection of the Department of Health, including all of its Agencies, Regional Offices, Bureaus or Specialised/Attached Offices/Units, against Tobacco Industry Interference. <p>Uganda - Ministry of Health - Tobacco Control Act (2015) - Part VIII - Protection of tobacco control policies from commercial and other vested interests of the tobacco industry</p> <p>WHO: <ul style="list-style-type: none"> Article 5.3 of the Framework Convention on Tobacco Control Framework for Engagement with non-State Actors (FENSA) </p> <ul style="list-style-type: none"> Colombia - Congress of Colombia - Law 190 of 1995, article 15 - Regime of civil servants EU - European Parliament - Declarations of interests - Members of the European Parliament France - High Authority for Transparency in Public Life Mexico - Chamber of Deputies of the High Congress of the Union - General Secretary - Secretariat of Parliamentary Services - Federal Law for administrative responsibilities of public servants, Article 8, XV USA - State Legislative Prohibitions on "Revolving Doors": a "practice of public officials or employees abandoning public service for lobbying positions"

Continued

Table 1 Continued

Individuals and institutions	Mechanisms identified through our scoping review	Type of mechanism				Examples where these mechanisms have been adopted (fully or to some extent)
		Transparency	Management	Identification, monitoring and education	Prohibition	
<p>Procedural guidelines for committees or advisory groups related to public health on:</p> <ul style="list-style-type: none"> ▲ size ▲ constituency ▲ membership ▲ role ▲ members duties and rights ▲ public disclosure of the composition of the group ▲ public disclosure of the minutes of the meetings ▲ public disclosure of the declarations of conflicts of interest for all members ▲ potential exclusion of individuals who have a conflict of interest⁴⁹ <p>That might include a prohibition for any person employed by specific industries related to health (eg, tobacco industry) or any entity working to further their interests to be a member of any government body, committee or advisory group that sets or implements public health policy^{49,50}</p> <p>Policy for the receipt of gifts and of donations to individuals in government (including prohibitions), as well as public disclosure of the list of such donations when these are permitted^{48,52,53}</p>	X	X	X	X	<ul style="list-style-type: none"> ▲ Brazil: <ul style="list-style-type: none"> - Brazilian Health Regulatory Agency (Anvisa) - Decree on conflict of interest related to working groups - Tobacco Control Inter-Ministerial Commission ▲ EU - European Food Safety Authority - Declarations of interests - Panel on nutrition ▲ Mexico: <ul style="list-style-type: none"> - Chamber of Deputies of the High Congress of the Union - General Secretary - Secretariat of Parliamentary Services - Regulation of the Scientific Council for the Health Risks Regulatory Agency - Ministry of Health - Ethics and Prevention of Conflicts of Interest Committee 	
<p>Ministers' and other government officials and employees' diary public disclosures, with an indication of dates, times, organisations and individuals met, as well as purpose and minutes of all meetings^{49,52,53,56}</p>	X		X		<ul style="list-style-type: none"> ▲ Australia - Australian Public Service Commission - Sect 4.12 Gifts and benefits ▲ Brazil - Code of Conduct for Senior Federal Administration 2014 ▲ Canada - Office of the Conflict of Interest and Ethics Commissioner - Registry of gifts ▲ EU - European Parliament - Register of gifts - 8th parliamentary term ▲ Brazil: <ul style="list-style-type: none"> - Anvisa - Agenda of senior officials - Presidency of the Republic - Agenda of the President of the Republic: (agenda available for other government officials) ▲ Canada - Government of Canada - Meetings and correspondence on healthy eating ▲ EU - European Parliament - Committees - Draft agendas 	
<p>Public disclosure of correspondence (including emails) and transcriptions of telephone conversations between corporations (and third parties acting on behalf of the industry) and individuals and institutions in government^{42,63}</p>	X		X		<ul style="list-style-type: none"> ▲ Canada - Government of Canada - Meetings and correspondence on healthy eating ▲ Russian Federation - public disclosure is included in the Federal Law N 15-FZ of February 23, 2013 On Protecting the Health of Citizens from the Effects of Secondhand Tobacco Smoke and the Consequences of Tobacco Consumption 	
<p>Public disclosure of the list and content of submissions (current and closed) to public consultations on public health issues, as well as dedicated personnel to review the evidence in these submissions⁵⁵</p>	X		X		<ul style="list-style-type: none"> ▲ Australia - Australian National Health and Medical Research Council (NHMRC) - Public submissions - Open public consultations ▲ EU - European Commission - Consultations - Public Health ▲ USA - US Food and Drug Administration - Code of Federal Regulations Title 21 - Food and Drugs 	
<p>Mandatory tax for companies to be used by an independent organisation (government agency for example) to fund public health research and practice⁵⁷</p>				X	<ul style="list-style-type: none"> ▲ Mongolia - Tobacco Control Act, 2005 (revised 2012) - Chapter Three - Financing of tobacco control activities: Article 10 - Health Promotion Foundation: "The Foundation shall be comprised by the budget, equal to 2 percent of tobacco excise tax." 	

Continued

Table 1 Continued

Individuals and institutions	Mechanisms identified through our scoping review	Type of mechanism				Examples where these mechanisms have been adopted (fully or to some extent)
		Transparency	Management	Identification, monitoring and education	Prohibition	
	Public availability of companies' financial reports	X		X		<ul style="list-style-type: none"> Canada - Alberta Securities Commission - System for Electronic Document Analysis and Retrieval (SEDAR) USA - US Security and Commission Exchange: Edgar, company filings
	Public disclosure of legal disputes and corresponding decisions in which corporations were and are involved	X		X		<ul style="list-style-type: none"> Brazil - Supreme Court portal Chile - Supreme Court portal
	Formal freedom of information (FOI) request process with: <ul style="list-style-type: none"> procedures for accessing information, including justifiable and reasonable search and retrieval fees for non-personal information narrow and explicitly identified limitations to disclosure requirements enforcement mechanism deadlines for the release of information sanctions for non-compliance proactive disclosure for certain type of information⁶² 	X				<ul style="list-style-type: none"> Australia - NHMRC - Freedom of Information Chile - Ministry General Secretariat of the Presidency - Law n°20285 on access to public information Colombia - Presidency of the Republic of Colombia - Law 1712 of 1994 on transparency and right to access to national public information EU - European Commission - Public access to documents India - Right to Information Act, 2005 Mexico - Chamber of Deputies of the High Congress of the Union - General Secretary - Secretariat of Parliamentary Services - Federal Law of transparency and access to public information South Africa - South African Government - Promotion of Access to Information Act 2 of 2000
	FOI disclosure log, containing information which has been released in response to an FOI access request	X				<ul style="list-style-type: none"> Australia - NHMRC - Freedom of Information Disclosure Log Brazil - Transparency portal Chile - Transparency portal Ireland - Department of Health - Freedom of Information Request Log UK - House of Lords: FOI Request Logs - UK Parliament
	Policy which aims to minimise industry involvement in health policy-making ^{62, 63}		X		X	<ul style="list-style-type: none"> Mongolia - Tobacco Control Act, 2005 (revised 2012) - Chapter 1: Article 4, State Policy on Tobacco Control Nepal - Tobacco Product Control and Regulatory Directive 2014 - Chapter 3: Controlling interference in Policy-Making and Implementation - Manufacturer and Related Parties Prohibited to Participate in Tobacco Product Control and Regulatory Task Uganda - Ministry of Health - Tobacco Control Act (2015) - Part VIII - Protection of tobacco control policies from commercial and other vested interests of the tobacco industry
	Policy to reject partnerships, including in research, with specific industries (eg, tobacco industry) ^{62, 63, 68}				X	<ul style="list-style-type: none"> Mongolia - Tobacco Control Act, 2005 (revised 2012) - Chapter 2: Article 8, Ban on advertising, promotion and sponsorship of tobacco products Nepal - Tobacco Product Control and Regulatory Directive 2014 - Chapter 3: Controlling interference in Policy-Making and Implementation - Prohibition on Partnerships and Participations Uganda - Ministry of Health - Tobacco Control Act (2015) - Part VIII - Protection of tobacco control policies from commercial and other vested interests of the tobacco industry

Continued

Table 1 Continued

Individuals and institutions	Mechanisms identified through our scoping review	Type of mechanism					Examples where these mechanisms have been adopted (fully or to some extent)
		Transparency	Management	Identification, monitoring and education	Prohibition	Other type	
	Regulation to restrict direct industry contributions to civil society organisations ⁶⁹				X		▲ Mongolia - Tobacco Control Act, 2005 (revised 2012) - Chapter 2: Article 8. Ban on advertising, promotion and sponsorship of tobacco products - 'It shall be prohibited to provide financial, material aids and contributions to social, health, welfare and environmental organisations by the tobacco industry or through another organisations under the name of "Social responsibility"'
	Protection of whistle-blowers and investigative reporters, ^{47, 48} which could include: <ul style="list-style-type: none"> ▲ guarantee of confidentiality ▲ secure communication ▲ legal assistance ▲ civil and criminal sanctions against the perpetrators of retaliation against whistle-blowers 					X	▲ Africa - Platform to Protect Whistle-Blowers in Africa ▲ Canada - Government of Canada - Justice Laws website - Criminal Code ▲ France - Maison des lanceurs d'alerte (House of whistle-blowers)
	Lobbying regulation ^{47, 49, 50, 62, 63} which: <ul style="list-style-type: none"> ▲ provides a clear and unambiguous definition of lobbyist and lobbying activities targeted by regulation⁵⁰ ▲ set standards for expected behaviour, for example, to avoid misuse of confidential information, conflict of interest and prevent revolving door practices ▲ includes procedures for securing compliance, in a coherent spectrum of strategies and mechanisms, including monitoring and enforcement ▲ includes a 5-year ban on lobbying for former ministers, ministerial staffers and senior public servants ▲ includes mandatory penalties in case of the provision of false or misleading information in accordance with national law 	X	X		X		▲ Chile - Ministry General Secretariat of the Presidency - Platform Lobby Law - Code of good practices for lobbyists
	Public disclosure of lobbyists and information on objectives, beneficiaries, funding sources and targets ^{49, 50, 62, 63, 70}	X		X			▲ Australia - Australian Government Lobbyists Register ▲ Chile - Ministry General Secretariat of the Presidency - Platform Lobby Law - Registry of lobbyists ▲ France - High Authority for Transparency in Public Life - Registry of Lobbyists ▲ USA - Office of the clerk - House of Representatives - Lobbying Disclosure
	Policy that prohibits government to endorse, support, partner with or participate in industry sponsored activities, including 'corporate social responsibility' (eg, tobacco industry) ^{50, 63}					X	▲ Nepal - Tobacco Product Control and Regulatory Directive 2014 - Chapter 3: Controlling Interference in Policy Making and Implementation - Prohibition on Assuming Organizational Social Responsibility - - 'The public agency officials are prohibited from participating in any tobacco industry sponsored programmes to accept assistance or awards, as well as participate in national and international programmes like meetings, trips, training, seminars and conferences organised with invitation and assistance from tobacco industries.' ▲ 'It is prohibited to accept tobacco industry assistance or collaboration offered in the name of educational development, ethnic or social class upliftment or supporting emergency services; and manufacturers and related parties are prohibited from providing such assistance'

Continued



Table 1 Continued

Individuals and institutions	Mechanisms identified through our scoping review	Type of mechanism				Examples where these mechanisms have been adopted (fully or to some extent)
		Transparency	Management	Identification, monitoring and education	Prohibition	
	<p>Awareness raising activities to inform and educate all branches of government and the public about the nature of harmful products, the need to protect public health policies from commercial and other vested interests of corporations (eg, tobacco industry) and the strategies and tactics used by the industry to interfere with the setting and implementation of public health policies:</p> <ul style="list-style-type: none"> ▲ governmental administrative circulars (circulars); ▲ meetings, workshops, presentations and consultations (meetings); ▲ training based measures (training), in which awareness raising is embedded in the training of civil servants and legal adviser of government ministries; ▲ intra-governmental advocacy by health ministries (or specific agencies) aimed at providing intelligence to other parts of government targeted by the industry in the context of specific policy conflicts (intra-governmental advocacy); ▲ ongoing campaigns by national, regional and local health officials aimed at highlighting the policy value of protecting health policy from industry interference (campaigning); ▲ mass media campaigns which use local television advertisements, newspaper articles, radio call in shows and websites to raise awareness of industry interference among the general public (public awareness raising).^{48 62 63 68} 			X		<ul style="list-style-type: none"> ▲ Djibouti - Law n°175/AN/07/5L Concerning Organization for the Protection of Health against the Tobacco Habit - Chapter VII: Education, communication and public awareness ▲ Nepal - Tobacco Product Control and Regulatory Directive 2014 Chapter 4: Develop Public Awareness and Make Public Places Smoke and Tobacco Consumption Free ▲ Panama - Ministry of Health - Resolution No. 745 on the National Commission for the Study of Tobacco
Political parties and commissions in charge of elections campaigns	<p>Regulation of the funding of political parties and elections campaigns:^{49 51 62 63}</p> <ul style="list-style-type: none"> ▲ timely, reliable, accessible and intelligible public disclosure of donations ▲ prohibitions for certain type of private contributions such as foreign interests or corporations ▲ information about third parties acting on behalf of the industry ▲ limits on donations ▲ limits on anonymous donations ▲ sanctions for violators of the law ▲ independent and efficient oversight 	X	X	X	X	<ul style="list-style-type: none"> ▲ Brazil - Superior Electoral Court: <ul style="list-style-type: none"> - Accountability of candidates and political parties - Disclosure of Election Candidatures Accounts ▲ Chile - Electoral Service - Donations ▲ France - National Assembly - Financing of political life: parties and electoral campaigns

COI, conflicts of interest.

Many countries and international organisations have internal policies and procedures to manage COI, some of which require the disclosure of these interests to the public. There are, in addition, existing tools that can help in assessing risks to individuals and institutions in public health when they are considering engaging with corporations, such as the Purpose, Extent, Relevant-harm, Identifiers, Link (PERIL) indicators⁵³ or the decision-making tool developed by the WHO for the prevention and management of COI in nutrition programmes.⁵⁴

For 22 of the 23 mechanisms identified in our scoping review, we found evidence of their adoption, in different parts of the world, to various degrees. Many of the examples identified in [table 1](#) refer to the interactions of governments and international organisations with the tobacco industry, following the ratification of the WHO FCTC. However, no country, to date, has entirely restricted the influence of corporations on public policy.

Academia, the media and the civil society

We identified, through our systematic searches, 26 mechanisms for addressing and managing the influence of corporations on academia, the media and the civil society ([table 2](#)).

Individuals and institutions in academia, the media and the civil society (including public health professionals, civil society organisations, and so on) often engage with corporations, through the sponsorship of events, funding of research project, scientific awards or other types of interactions. These are standard practices, and while there are multiple reasons for them to happen, the scarcity of public funding and the vast resources of corporations are often mentioned.⁴³ There is, however, growing concern that the influence of the industry poses threats to the independence, integrity and credibility of these individuals and institutions.^{29 55–61}

We found examples, from across the world, where these 21 of these 26 mechanisms have been adopted. Some universities refuse funding from the tobacco industry; some make transparent interactions between their staff members, students and corporations. Many institutions in academia and civil society have conflicts of interest policies, which is also the case for some scientific journals and professionals associations. The provision of education in universities, conferences and other meetings and to journalists was also cited.

DISCUSSION

Our searches identified 49 mechanisms for addressing and/or managing the influence of corporations on public health policy, research and practice. The primary purposes of the mechanisms identified are to manage conflicts of interest and increase the transparency of public-private interactions. Based on publicly available information, we found that 43 of these mechanisms had been adopted, although we could not confirm that they

had all been implemented and had been determined to be effective.

There is currently limited research in this area, with only a few peer-reviewed scientific articles published in the literature. We also noted that there is a lack of research from low-income or middle-income countries. We identified limited evidence on mechanisms targeted at the media and the civil society, compared with those targeted at governments and academia. We found no information for schools on ways to address and manage the influence of corporations on their institutions, in relation to public health (for example, through the provision of health or nutrition education or physical activity programmes). We identified limited information about mechanisms that could address the influence of corporations; most mechanisms seek to manage that influence (through transparency, for example). Managing the influence of corporations is an important first step, but is not sufficient, or could even be counterproductive in some circumstances.⁴⁴

To our knowledge, this review is the first attempt to develop an inventory of mechanisms to address and manage the influence of corporations on public health policy, research and practice. Among its strengths is its breadth. Although we limited our searches to mechanisms developed to address and/or manage the influence of the alcohol, food, gambling, oil, pharmaceutical and tobacco industries, many of the mechanisms identified in our review were developed with no restriction on the type of industries targeted. Hence this inventory may help in building efforts to address and/or manage the influence of all types of industries.

The list compiled here is non-exhaustive and by nature, subject to changes, as an increasing number of governments and other institutions take measures to prevent undue influence from industry. It rather was intended to be a first attempt to identify mechanisms that exist across the globe, as well as examples where these mechanisms have been adopted. It thus provides a firm footing for further work in this area.

In this scoping review, we did not assess the quality of the included studies, as we only used them to identify mechanisms. In addition, mechanisms at the subnational level were not included here and might be the subject of future investigations. Moreover, we excluded work funded by the industry, but it is possible that some authors did not declare their sources of funding in the publications. In this case, their work is included in our analysis, which represents a COI with regards to the issues at stake.

Ideally, corporations should refrain from influencing public health policy, research and practice. Governments, international organisations, academia, the media and the civil society should avoid interacting with corporations whose interests risk damaging their independence, integrity and credibility.⁴³ However, in reality, these interactions often are the default approach in public health, probably driven by a strong influence exerted by businesses.⁴³ These interactions, the reasons for them to happen and

Table 2 Mechanisms for addressing and/or managing the influence of corporations on public health research and practice (non-exhaustive)

Individuals and other research institutions*	Type of mechanism					Examples where these mechanisms have been adopted (fully or to some extent)
	Mechanisms identified through our scoping review	Transparency	Management	Prohibition	Other type	
Universities and other research institutions*						
<p>Policy on conflicts of interest and external engagement that includes:^{40,68,71,74}</p> <ul style="list-style-type: none"> ▲ a clear and realistic description of circumstances and relationships that can lead to a conflict-of-interest ▲ information about whom to accept funding from (including restrictions on funding from specific industries, such as the tobacco industry), based on a risks analysis ▲ information about how conflicts of interest, both at the individual and institutional levels, will be addressed (and avoided, if necessary), reported, reviewed, documented, managed or eliminated, as well sanctions in case of non-compliance with the policy ▲ requirements for full disclosure of funding sources and financial interests in research publications and media releases ▲ requirements for continuous reporting from projects with industry funding if institutional policy permits active management of obvious conflicts of interests ▲ no money should be accepted if it explicitly constrains the capability of institutions to do their work without interference from the funder⁷¹ ▲ Institutions should not accept money, if doing so pushes them to be something that is not consistent with their mission (eg, to promote the health of the public)^{71,74} 	X	X	X		<ul style="list-style-type: none"> ▲ Australia <ul style="list-style-type: none"> - Deakin University – ‘the University must not accept direct or indirect funding from or enter into any partnership or other arrangement with the tobacco industry, an organisation in the tobacco industry or from a foundation that accepts funds from the tobacco industry.’ - The University of Sydney – ban on acceptance of funding from tobacco companies - The University of Sydney, Charles Perkins Centre – Engagement with industry guidelines ▲ USA - American Association of University Professors - Recommended Principles to Guide Academy-Industry Relationships ▲ USA - National Institutes of Health - Financial Conflict of Interest 	
<p>Public disclosure and reporting to the institution’s conflict of interest committee of:</p> <ul style="list-style-type: none"> ▲ the declarations of conflicts of interests of individuals, throughout all stages of design, implementation and reporting^{40,68,71,74,77} ▲ funding sources and other donations from corporations (and third parties acting on behalf of the industry) to individuals and institutions ▲ fellowships, awards and other prizes from corporations (and third parties acting on behalf of the industry) to individuals and institutions 	X			X	<ul style="list-style-type: none"> ▲ Australia <ul style="list-style-type: none"> - The University of Sydney - School of Molecular Bioscience - Scholarships and Prizes - Flinders University - School of Health Science – Student prizes ▲ USA - The University of California - General University Policy- APM - 025 regarding academic appointees - Conflict of Commitment and Outside Activities of Faculty Members 	
Policy on academic freedom, autonomy and control ⁷¹		X				<ul style="list-style-type: none"> ▲ France - Education Code, L952-2 on academic freedom ▲ New Zealand - Education Act 1989 No 80, Public Act 161 ▲ Academic freedom
Policy on academic publication rights ^{40,68,74}			X			<ul style="list-style-type: none"> ▲ USA - Stanford University – Stanford University industrial contracts office - Researcher’s Guide to Working with Industry
Provision of education to students on how to evaluate information provided by corporations				X		<ul style="list-style-type: none"> ▲ USA - Structured Pharmaceutical Representative Interactions and Counterdetailing sessions as Components of Medical Resident Education⁸

Continued

Table 2 Continued

Individuals and institutions	Mechanisms identified through our scoping review	Type of mechanism					Examples where these mechanisms have been adopted (fully or to some extent)
		Transparency	Management	Identification, monitoring and education	Prohibition	Other type	
Research funding committees, panels or boards	<p>Policy to ensure that:⁷⁵</p> <ul style="list-style-type: none"> ▶ research priorities and the distribution of funding is determined by researchers who have not received direct or indirect (through third institutions) funding from corporations ▶ academic reviewers should not include those who have accepted funding in the past 3 years from industry who have a conflict of interest in the research to be conducted <p>Policy for government to conduct clinical trials and other research activities involving patients or to choose the researchers who would design and conduct the tests.⁷⁹</p> <p>Public registry of all clinical trials and other research activities involving patients with information on the study design, methods and full results.^{40,66,72,73-81}</p> <p>Publication of all relevant data, outcomes and results of clinical trials and other research activities involving patients, including null results, adverse effects and stopping rules, administered and monitored by an independent institution.^{66,68,78-81}</p>		X		X		<ul style="list-style-type: none"> ▶ UK - National Health Service (NHS) England - Managing Conflicts of Interest: Statutory Guidance for Clinical Commission Groups and Conflicts of interest management templates, including registers of gifts and hospitality ▶ UK – Wellcome - Conflicts of interest policy ▶ USA - National Institutes of Health (NIH) - Financial Conflicts of Interest for Awardees - standard operating procedure
						X	
		X		X			<ul style="list-style-type: none"> ▶ USA - ClinicalTrials.gov - a public database operated by the NIH (most clinical trials are conducted by pharmaceutical companies)
Ethics review boards	Policy to assess the appropriateness of funder–researcher relationships. ⁷²		X				<ul style="list-style-type: none"> ▶ Germany - Institute for Therapy Research Munich - Policy on Competing Interests ▶ International - World Medical Association Declaration of Helsinki - Ethical Principles for Medical Research Involving Human Subjects - Ethics Committees - "This committee must be transparent in its functioning, must be independent of the researcher, the sponsor and any other undue influence and must be duly qualified"

Continued

Table 2 Continued

Individuals and institutions	Mechanisms identified through our scoping review	Type of mechanism					Other type	Examples where these mechanisms have been adopted (fully or to some extent)
		Transparency	Management	Identification, monitoring and education	Prohibition			
Academic journals	Policy to reject manuscripts funded by or written by contributors from specific industries (and third parties acting on behalf of the industry) ^{62,83}				X		<ul style="list-style-type: none"> ▲ International - Cochrane policy on commercial sponsorship of Cochrane Reviews and Cochrane Group ▲ International - Journal of Human Lactation does not publish research funded by companies that are not compliant with WHO Code on the Marketing of Breast-Milk Substitutes ▲ International - Tobacco control, BMJ, Heart, Thorax; BMJ Open, PLoS Medicine, PLoS One, PLoS Biology, Journal of Health Psychology, journals published by the American Thoracic Society - do not publish research funded by the tobacco industry 	
	Policy to discourage individuals from engaging in industry-led 'ghost-writing' or ghost authorship ⁷		X				<ul style="list-style-type: none"> ▲ Neurology Journals - Authorship and Disclosures ▲ Annals of Internal Medicine - Exorcising Ghosts and Unwelcome Guests 	
	Policy for addressing, managing, through declarations and disclosure, conflicts of interests for editors ^{68,72,75}	X	X	X			<ul style="list-style-type: none"> ▲ International - the BMJ - Staff declarations ▲ International - Public Health Nutrition - Editors conflict of interest statements ▲ International Society of Addiction Journal Editors - declarations of conflicts of interest for contributors and editors 	
	Policy including: <ul style="list-style-type: none"> ▲ a mandatory declaration and disclosure of conflicts of interests for contributors (which would include details about conflicts with third parties acting on behalf of the industry)^{61,72,73,77,86,85} ▲ a positive statement that all contributors in a publication had complete control over the research process^{72,77} ▲ a statement, in the methods section, about the role of the funding source in the design, conduct, analysis and reporting of the data^{3,17} ▲ additional steps that will be undertaken by the journal to obtain the most meaningful disclosures from authors, such as quick search of the tobacco industry documents for the names of authors of papers on tobacco or the invitation of a peer reviewer with tobacco industry document research experience⁷³ 	X	X	X			<ul style="list-style-type: none"> ▲ International Committee of Medical Journal Editors (ICMJE) - Conflict of interest form 	
	Policy that requires that all trials be registered at the time of initiation of the study ⁸³	X		X			<ul style="list-style-type: none"> ▲ USA - American Journal of Clinical Nutrition - information for authors: format and style requirements 	
	Policy to ensure that advertising revenue is independent of corporations that have a conflict of interest with the journal's main mission ⁷⁹				X		<ul style="list-style-type: none"> ▲ International - BMJ - The BMJ and sister journals no longer carry advertisements for breastmilk substitutes 	

Continued

Table 2 Continued

Individuals and institutions	Mechanisms identified through our scoping review	Type of mechanism					Other type	Examples where these mechanisms have been adopted (fully or to some extent)
		Transparency	Management	Identification, monitoring and education	Prohibition			
Professional associations and civil society organisations	<p>Policy or code of conduct⁷² including information about:</p> <ul style="list-style-type: none"> ▶ whom to accept funding from, including bans on the acceptance of funding from specific industries (eg, tobacco industry) (including third parties acting on behalf of the industry) based on a risks analysis^{69, 82} ▶ how conflicts of interest, both at the individual and institutional levels, will be addressed (and avoided if necessary), reported, reviewed, documented, managed or eliminated, as well as sanctions in case of non-compliance with the policy⁸⁴ ▶ individuals should not solicit or accept gifts from specific industries (eg, tobacco industry) (and third parties acting on behalf of the industry) that might influence or appear to influence objectivity, independence or fairness in clinical and professional judgement⁸⁴ ▶ no money should be accepted if it explicitly constrains the capability of the institutions to do their work without interference from the funder⁷¹ ▶ institutions should not accept money if doing so pushes them to be something that is not consistent with their mission to promote the health of the public^{71, 80, 85} <p>Governance workshops: governance boards are assisted in their deliberations on industry involvements by presentations or workshops to raise their awareness of the issues and help them reach an informed position on the extent of industry involvement⁶⁹</p> <ul style="list-style-type: none"> ▶ Public disclosure of:⁶⁹ <ul style="list-style-type: none"> ▶ funding (or other donations) received from corporations (and third parties acting on behalf of the industry) to individuals and institutions ▶ list of fellowships, awards and other prizes funded by/ received from corporations (and third parties acting on behalf of the industry) ▶ agreements made with corporations (and third parties acting on behalf of the industry) <p>The above strategies could be mandated by law, with substantial fines for those who fail to comply.</p> <p>Monitoring of influence of commercial interests on public health: annual reports and international comparisons^{69, 83}</p>	X	X	X	X		<ul style="list-style-type: none"> ▶ Canada - In 2017, the Canadian Medical Association's policy on physicians' interactions with industry was formally adopted by 22 out of 60 Canadian medical associations ▶ International Network on Brief Interventions for Alcohol & Other Drugs (INEBRIA) - Position Statement on the alcohol industry ▶ International Society of Behavioral Nutrition and Physical Activity (ISBNPA) - Partnership, sponsorship and donation policy ▶ UK - Royal College of Paediatrics and Child Health (RCPCH) - RCPCH statement on relationship with formula milk companies ▶ World Obesity Financial Relationship Policy/World Public Health and Nutrition Association (WPHNA) - Conflict of interest and ethics policy 	
				X			<ul style="list-style-type: none"> ▶ USA - American Academy of Nutrition and Dietetics - Meet our sponsors 	
					X		<p>See online supplementary file 1 for a list of institutions working on the influence of corporations on public health policy, research and practice, some of which are implementing this mechanism</p>	

Continued



Table 2 Continued

Individuals and institutions	Mechanisms identified through our scoping review	Type of mechanism				Other type	Examples where these mechanisms have been adopted (fully or to some extent)
		Transparency	Management	Identification, monitoring and education	Prohibition		
Conferences and other meetings in public health	<p>Policy including information about:^{75,86,87}</p> <ul style="list-style-type: none"> ▲ Individuals and institution responsible for the content, quality and scientific integrity of activities. This necessitates eliminating commercial bias for or against any product and maintaining control over planning, programme design, faculty selection, educational methods, materials and evaluations whom to accept funding from and how to document agreements made with corporations, based on a risks analysis ▲ how conflicts of interest, both at the individual and institutional levels, will be addressed (and avoided, if necessary), reported, reviewed, documented, managed or eliminated, as well sanctions in case of non-compliance with the policy ▲ ways to avoid focus on a single product or company (including through branded items, exhibit halls and booths, use of brand or trade names) ▲ control of the access to registrants' mailing addresses ▲ review of educational materials and whether or not to ban the distribution of promotional materials in educational sessions ▲ which party is responsible for general oversight to ensure compliance with policy, as well as sanctions for non-compliance <p>Public disclosure of:^{75,87}</p> <ul style="list-style-type: none"> ▲ declarations of conflicts of interest for conference organisers and all participants ▲ list of sponsors, nature of sponsorship, as well as agreements made with sponsors ▲ list of presentations made by individuals from, or supported by, corporations (and third parties acting on behalf of the industry) ▲ list of awards and other prizes from corporations (and third parties acting on behalf of the industry) ▲ list of booths <p>Provision of education to participants on how to evaluate information provided by corporations</p>	X	X	X	X	X	<ul style="list-style-type: none"> ▲ ISNPA - policy for sponsors of annual meetings ▲ WPHNA - World Nutrition Congress 2016 - Conflict of interest and ethics policy
		X					<ul style="list-style-type: none"> ▲ Latin America - Sociedad Latinoamericana de Nutrición (SLAN) - Conflict of Interest policy ▲ USA - Obesity Week 2018 abstracts (including sources of funding)
				X			

Continued

Table 2 Continued

Individuals and institutions	Mechanisms identified through our scoping review	Type of mechanism				Other type	Examples where these mechanisms have been adopted (fully or to some extent)
		Transparency	Management	Identification, monitoring and education	Prohibition		
Media	<p>Education and certification programmes to be developed for journalists who report on health, which would emphasise the risks of conflicts of interest⁶⁸</p> <p>Codes of ethics⁶⁸</p> <ul style="list-style-type: none"> ▲ requiring that journalists disclose financial or in-kind support relevant to each article or commentary piece ▲ specifying the relationships that are not acceptable (eg, journalists reporting on products or services produced by companies in which they hold shares, or companies paying for the travel expenses of journalists' families) ▲ opposing industry-sponsored prizes and educational endorsements <p>Where countries regulate journalism, the above strategies could be mandated by law, with substantial fines for those who fail to comply</p> <p>Publicly accessible register of relationships between industry (and third parties acting on behalf of the industry) and journalists, editors, media organisations and journalism organisations (including professional and educational bodies)⁶⁸</p> <p>Where countries regulate journalism, the above strategies could be mandated by law, with substantial fines for those who fail to comply</p>	X	X	X	X		<p>International - Association of Health Care Journalists - Statement of Principles of the Association of Health Care Journalists</p>
Other	<p>Public database of conflicts of interests for individuals and institutions in public health^{40,68,83}</p>	X		X			<ul style="list-style-type: none"> ▲ The Centre for Science in the Public Interest (CSPi) used to have a database of more than 4000 scientist and universities that had ties with the industry (the list is no longer available)⁸⁹ ▲ Several countries have adopted transparency policies with regard to the interactions between healthcare professionals and pharmaceutical companies:⁴⁴ <ul style="list-style-type: none"> - France - Public database Transparency - Health - Law No. 2011-2012 of 29 December 2011 on the Strengthening of Health Protection for Medicinal and Health Products - USA - Centers for Medicare and Medicaid Services - Open Payments, established through the Physician Payments Sunshine Act (PPSA), also known as section 6002 of the Affordable Care Act (ACA) of 2010

*These mechanisms are directed at individuals in academia, including students, researchers and other academic professionals, and their institutions, including universities, research organisations, research agencies from governments and academic medical centres.

†These mechanisms are directed at individuals, including health and public health professionals, and their institutions, including patient and consumer organisations, health/public health professionals organisations.

associated risks for public health were recently discussed in the literature.⁴³ Public institutions sometimes lack resources, particularly financial resources, to address urgent public health issues.⁴³ Academic institutions might want to contribute to the economic development in their country, thus partnering with corporations.⁴³ The current situation is perhaps challenging, but there is scope (and need) for change. Many of the examples we identified in our review related to the implementation of the WHO FCTC, the only global treaty that explicitly addresses the interference of an industry with public health policy. The proposed FCFS and FCAC are therefore potential solutions to address and manage the influence that vested interests could have on public health policy, research and practice. If adopted and evaluated more widely, many of the mechanisms described in this manuscript could contribute to efforts to prevent and control non-communicable diseases.

More research on each of these mechanisms is needed, including on their effectiveness in addressing and/or managing the influence of corporations on public health policy, research and practice. There is a need to understand if these mechanisms are effective in addressing the influence of all industries, or of only some industries, and then study the political, social and other factors responsible for these differences. Collectively, public health professionals might also develop, in the future, new mechanisms not described in our manuscript. Some countries have already adopted some of the mechanisms proposed in this manuscript; others have done little, including countries facing strong resistance to developing and implementing them. An evaluation of the implementation of these mechanisms, which could include a benchmarking exercise, is therefore needed and will inform governments, universities and other actors in public health. In addition to these mechanisms, a module on 'corporations and health' could be part of the curriculum for professionals being trained in public health policy, research or practice. Conferences and other meetings of public health professionals should also be used as a platform where to discuss the influence of the industry on public health policy, research and practice. This may be particularly important in the case of academic conferences which involve extensive resources and input from and partnerships with corporations, such as nutrition and gambling conferences.

In conclusion, corporations have significant economic and political power, which may, in some circumstances, be detrimental to public health. We identified several mechanisms that could help address and/or manage that influence. The development, implementation and monitoring of these mechanisms seem crucial to protect public health from the commercial interests of industry actors.

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REFERENCES

- Moodie R, Stuckler D, Monteiro C, *et al*. Profits and pandemics: prevention of harmful effects of tobacco, alcohol, and ultra-processed food and drink industries. *Lancet* 2013;381:670–9.
- World Health Organization. Opening address - Dr Margaret Chan Director-General of the World Health Organization. *8th global conference on health promotion Helsinki*, Finland, 2013.
- Swinburn BA, Kraak VI, Allender S, *et al*. The global syndemic of obesity, undernutrition, and climate change: the lancet commission report. *Lancet* 2019;393:791–846.
- State of California - Department of Justice - Office of the Attorney General. Master settlement agreement, 2017. Available: <http://oag.ca.gov/tobacco/msa>
- University of California San Francisco. Truth tobacco industry documents, 2017. Available: <https://www.industrydocumentslibrary.ucsf.edu/tobacco/>
- Gilmore AB, Fooks G, Drope J, *et al*. Exposing and addressing tobacco industry conduct in low-income and middle-income countries. *Lancet* 2015;385:1029–43.
- Savell E, Gilmore AB, Fooks G. How does the tobacco industry attempt to influence marketing regulations? A systematic review. *PLoS One* 2014;9:e87389.
- Ulucanlar S, Fooks GJ, Gilmore AB. The policy dystopia model: an interpretive analysis of tobacco industry political activity. *PLoS Med* 2016;13:e1002125.

- 9 Costa H, Gilmore AB, Peeters S, *et al.* Quantifying the influence of the tobacco industry on EU governance: automated content analysis of the EU tobacco products Directive. *Tob Control* 2014;23:473–8.
- 10 Peto R, Lopez AD, Boreham J, *et al.* *Mortality from smoking in developed countries 1950–2000*. 2 edn, 2006.
- 11 Mialon M, Swinburn B, Sacks G. A proposed approach to systematically identify and monitor the corporate political activity of the food industry with respect to public health using publicly available information. *Obes Rev* 2015;16:519–30.
- 12 McCambridge J, Mialon M, Hawkins B. Alcohol industry involvement in policymaking: a systematic review. *Addiction* 2018;119:1111/ add.14216. [Epub ahead of print: 15 Mar 2018].
- 13 Savell E, Fooks G, Gilmore AB. How does the alcohol industry attempt to influence marketing regulations? A systematic review. *Addiction* 2016;111:18–32.
- 14 Oreskes N, Conway E. *Merchants of doubt: how a handful of scientists obscured the truth on issues from tobacco smoke to global warming*, 2011.
- 15 Hancock L, Ralph N, Martino FP. Applying corporate political activity (CPA) analysis to Australian gambling industry submissions against regulation of television sports betting advertising. *PLoS One* 2018;13:e0205654.
- 16 Kickbusch I, Allen L, Franz C. The commercial determinants of health. *Lancet Glob Health* 2016;4:e895–6.
- 17 Madureira Lima J, Galea S. The corporate permeation index - a tool to study the macro-social determinants of non-communicable disease. *SSM Popul Health* 2019;7:100361.
- 18 World Health Organization. *Technical resource on the protection of public health policies with respect to tobacco control from commercial and other vested interests of the tobacco industry for country implementation of who framework convention on tobacco control article 5.3*. Geneva, 2012.
- 19 Southeast Asia Tobacco Control Alliance (SEATCA). *Surveillance of tobacco industry activities toolkit*. Thailand, 2009.
- 20 Tobacco Control Research Group. *Tobaccotactics*, 2013. Available: http://www.tobaccotactics.org/index.php/Main_Page
- 21 Mialon M, Swinburn B, Allender S, *et al.* Systematic examination of publicly-available information reveals the diverse and extensive corporate political activity of the food industry in Australia. *BMC Public Health* 2016;16:283.
- 22 Mialon M, Swinburn B, Wate J, *et al.* Analysis of the corporate political activity of major food industry actors in Fiji. *Global Health* 2016;12:18.
- 23 Mialon M, Mialon J. Analysis of corporate political activity strategies of the food industry: evidence from France. *Public Health Nutr* 2018;21:3407–21.
- 24 Mialon M, Mialon J. Corporate political activity of the dairy industry in France: an analysis of publicly available information. *Public Health Nutr* 2017;20:2432–9.
- 25 Mialon M, Gomes FdaS. Public health and the ultra-processed food and drink products industry: corporate political activity of major transnationals in Latin America and the Caribbean. *Public Health Nutr* 2019;22:1898–908.
- 26 Jaichuen N, Phulkard S, Certthkrikul N, *et al.* Corporate political activity of major food companies in Thailand: an assessment and policy recommendations. *Global Health* 2018;14:115.
- 27 Tselengidis A, Östergren P-O. Lobbying against sugar taxation in the European Union: analysing the lobbying arguments and tactics of stakeholders in the food and drink industries. *Scand J Public Health* 2019;47:565–75.
- 28 Friends of the UN HLM on NCDs. The how: a message for the un high-level meeting on NCDs. *Lancet* 2018;392:e4–5.
- 29 Moynihan R, Macdonald H, Heneghan C, *et al.* Commercial interests, transparency, and independence: a call for submissions. *BMJ* 2019;365:11706.
- 30 Baum FE, Margaret Anaf J. Transnational corporations and health: a research agenda. *Int J Health Serv* 2015;45:353–62.
- 31 Baum FE, Sanders DM, Fisher M, *et al.* Assessing the health impact of transnational corporations: its importance and a framework. *Global Health* 2016;12:27.
- 32 World Health Organization. *WHO framework convention on tobacco control*. Geneva, 2003.
- 33 The Lancet. A framework convention on alcohol control. *Lancet* 2007;370:1102.
- 34 World Health Organization. Parties to the WHO framework convention on tobacco control. Available: <https://www.who.int/fctc/cop/en/> [Accessed 6 Feb 2019].
- 35 Gravely S, Giovino GA, Craig L, *et al.* Implementation of key demand-reduction measures of the who framework convention on tobacco control and change in smoking prevalence in 126 countries: an association study. *Lancet Public Health* 2017;2:e166–74.
- 36 McCambridge J, Daube M, McKee M. Brussels declaration: a vehicle for the advancement of tobacco and alcohol industry interests at the science/policy interface? *Tob Control* 2019;28:7–12.
- 37 World Health Organization. *Sixty-fifth World health assembly WHA65.6 agenda item 13.3*. Geneva: World Health Organization, 2012.
- 38 Torjesen I. Exclusive: partnering with alcohol industry on public health is not okay, who says. *BMJ* 2019;365:11666.
- 39 McCambridge J, Mialon M. Alcohol industry involvement in science: a systematic review of the perspectives of the alcohol research community. *Drug Alcohol Rev* 2018;37:565–79.
- 40 Cullerton K, Adams J, Forouhi N, *et al.* What principles should guide interactions between population health researchers and the food industry? systematic scoping review of peer-reviewed and grey literature. *Obes Rev* 2019;20:1073–84.
- 41 Cochrane Training. Scoping reviews: what they are and how you can do them. Available: <https://training.cochrane.org/resource/scoping-reviews-what-they-are-and-how-you-can-do-them> [Accessed 9 Aug 2019].
- 42 Fabbri A, Santos Ala, Mezinska S, *et al.* Sunshine policies and murky shadows in Europe: disclosure of pharmaceutical industry payments to health professionals in nine European countries. *Int J Health Policy Manag* 2018;7:504–9.
- 43 Marks JH. *The 'perils of partnership: Industry influence, institutional integrity, and public health*. New York: Oxford University Press.
- 44 Goldberg DS. The shadows of sunlight: why disclosure should not be a priority in addressing conflicts of interest. *Public Health Ethics* 2018.
- 45 World Health Organization. About WHO: WHO's engagement with non-state actors, 2016. Available: <http://www.who.int/about/collaborations/non-state-actors/en/>
- 46 Khayat-zadeh-Mahani A, Ruckert A, Labonté R. Could the WHO's framework on engagement with Non-State actors (FENSA) be a threat to tackling childhood obesity? *Glob Public Health* 2018;13:1337–40.
- 47 Bank AD. *Organisation for economic co-operation and development. Managing conflict of interest: frameworks, tools, and instruments for preventing, detecting, and managing conflict of interest*. Mandaluyong City, Metro Manila, Philippines: Asian Development Bank, 2008.
- 48 Organization For Economic Co-operation and Development. *Managing conflict of interest in the public sector: a toolkit*, 2005.
- 49 Organization For Economic Co-operation and Development. Preventing policy capture: integrity in public decision making. Available: <https://doi.org/10.1787/9789264065239-en> [Accessed 9 Apr 2019].
- 50 Organization For Economic Co-operation and Development. *Transparency and integrity in lobbying*, 2013.
- 51 Organization For Economic Co-operation and Development. *Financing democracy: funding of political parties and election campaigns and the risk of policy capture*, 2016.
- 52 Bank W. Public sector governance - public accountability, mechanisms, 2013. Available: <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTPUBLICSECTORANDGOVERNANCE/0,,contentMDK:23352107~pagePK:148956~piPK:216618~theSitePK:286305,00.html> [Accessed 5 Feb 2019].
- 53 Adams PJ. Assessing whether to receive funding support from tobacco, alcohol, gambling and other dangerous consumption industries. *Addiction* 2007;102:1027–33.
- 54 World Health Organization. *Draft approach for the prevention and management of conflicts of interest in the policy development and implementation of nutrition programmes at country level: decision-making process and tool*, 2017.
- 55 Hennessy M, Cullerton K, Baker P, *et al.* Time for complete transparency about conflicts of interest in public health nutrition research. *HRB Open Res* 2019;2:1.
- 56 Mart S, Giesbrecht N. Red flags on pinkwashed drinks: contradictions and dangers in marketing alcohol to prevent cancer. *Addiction* 2015;110:1541–8.
- 57 Freedhoff Y, Hébert PC. Partnerships between health organizations and the food industry risk derailing public health nutrition. *CMAJ* 2011;183:291–2.
- 58 Jacobson MF. Lifting the veil of secrecy from industry funding of nonprofit health organizations. *Int J Occup Environ Health* 2005;11:349–55.
- 59 Arie S. Nestle and PepsiCo will give nutritional advice to women in anti-hunger campaign in Mexico. *BMJ* 2013;346:f2458.
- 60 Simon M. *Clowning around with charity: how McDonald's exploits philanthropy and targets children*. USA: Eat Drink Politics, 2013.
- 61 Brooks EC. Does truthful advertising ever pass "the smell test" in a peer-reviewed journal? *J Hum Lact* 2019;35:649–53.



- 62 Fooks GJ, Smith J, Lee K, *et al.* Controlling corporate influence in health policy making? an assessment of the implementation of article 5.3 of the world Health organization framework convention on tobacco control. *Global Health* 2017;13:12.
- 63 World Health Organization. *Guidelines for implementation of Article 5.3 of the WHO Framework Convention on Tobacco Control* ' on the protection of public health policies with respect to tobacco control from commercial and other vested interests of the tobacco industry, 2008.
- 64 Swinburn B, Vandevijvere S, Kraak V, *et al.* Monitoring and benchmarking government policies and actions to improve the healthiness of food environments: a proposed government healthy food environment policy index. *Obes Rev* 2013;14 Suppl 1:24–37.
- 65 Balwicki Łukasz, Stokłosa M, Balwicka-Szczyrba M, *et al.* Tobacco industry interference with tobacco control policies in Poland: legal aspects and industry practices. *Tob Control* 2016;25:521–6.
- 66 Dhalla I, Laupacis A. Moving from opacity to transparency in pharmaceutical policy. *CMAJ* 2008;178:428–31.
- 67 Nestle M. *Unsavory truth: how food companies skew the science of what we eat.* 1 edn. New York: Basic Books, 2018.
- 68 Stenius K, Babor TF. The alcohol industry and public interest science. *Addiction* 2010;105:191–8.
- 69 Adams PJ, Rossen F. Reducing the moral jeopardy associated with receiving funds from the proceeds of gambling. *J Gamb Issues* 2006;11.
- 70 Reeve B, Gostin LO. "Big" food, tobacco, and alcohol: reducing industry influence on noncommunicable disease prevention laws and policies comment on "addressing ncds: challenges from industry market promotion and interferences". *Int J Health Policy Manag* 2019;8:450–4.
- 71 Galea S, Saitz R, Funding SR. Funding, institutional conflicts of interest, and schools of public health: realities and solutions. *JAMA* 2017;317:1735–6.
- 72 Miller P, Babor TF, McGovern T, *et al.* Relationships with the Alcoholic-Beverage Industry, Pharmaceutical Companies, and Other Funding Agencies: Holy Grail or Poisoned Chalice? In: Babor TF, Stenius K, Pates R, *et al.*, eds. *Publishing addiction science: a guide for the Perplexed.* London: Ubiquity Press, 2017: 323–52.
- 73 Bero LA, Glantz S, Hong M-K. The limits of competing interest disclosures. *Tob Control* 2005;14:118–26.
- 74 Mozaffarian D. Conflict of interest and the role of the food industry in nutrition research. *JAMA* 2017;317:1755–6.
- 75 Livingstone C, Adams PJ. Clear principles are needed for integrity in gambling research. *Addiction* 2016;111:5–10.
- 76 Gmel G. The good, the bad and the ugly. *Addiction* 2010;105:203–5.
- 77 Laine C, Mulrow CD. Exorcising ghosts and unwelcome guests. *Ann Intern Med* 2005;143:611.
- 78 Wall GC, Smith HL, Craig SR, *et al.* Structured pharmaceutical representative interactions and counterdetailing sessions as components of medical resident education. *J Pharm Pract* 2013;26:151–6.
- 79 Rodwin MA. Conflicts of interest, institutional corruption, and pharma: an agenda for reform. *J Law Med Ethics* 2012;40:511–22.
- 80 Spelsberg A, Martiny A, Schoenhofer PS, *et al.* Is disclosure of potential conflicts of interest in medicine and public health sufficient to increase transparency and decrease corruption? *J Epidemiol Community Health* 2009;63:603–5.
- 81 Poli A, Marangoni F, Agostoni CV, *et al.* Research interactions between academia and food companies: how to improve transparency and credibility of an inevitable liaison. *Eur J Nutr* 2018;57:1269–73.
- 82 Babor TF. How should we define, document, and prevent conflicts of interest in alcohol research? *Int J Alcohol Drug Res* 2016;5:5.
- 83 Lesser LI. Reducing potential bias in industry-funded nutrition research. *Am J Clin Nutr* 2009;90:699–700.
- 84 American College of Clinical Pharmacy, Hatton RC, Chavez ML, *et al.* Pharmacists and industry: guidelines for ethical interactions. *Pharmacotherapy* 2008;28:410–20.
- 85 Portugal C, Cruz TB, Espinoza L, *et al.* Countering tobacco industry sponsorship of Hispanic/Latino organizations through policy adoption: a case study. *Health Promot Pract* 2004;5:143S–56.
- 86 Studdert DM, Mello MM, Brennan TA. Financial conflicts of interest in physicians' relationships with the pharmaceutical industry--self-regulation in the shadow of federal prosecution. *N Engl J Med* 2004;351:1891–900.
- 87 Shnier A, Lexchin J. Continuing medical education and pharmaceutical industry involvement: an evaluation of policies adopted by Canadian professional medical associations. *Int J Risk Saf Med* 2017;29:1–16.
- 88 Lipworth W, Kerridge I, Sweet M, *et al.* Widening the debate about conflict of interest: addressing relationships between journalists and the pharmaceutical industry. *J Med Ethics* 2012;38:492–5.
- 89 Ramsay S. Online database reveals researchers' industry ties. *Lancet* 2001;357:1677.