Working towards guidance on interactions between dietary public health researchers and the food industry

Report of an international workshop

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The University Centre, Cambridge, UK

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1.0 Executive Summary

Background

Poor diet is a growing global public health challenge that will ultimately require action by food industry players, either voluntary or mandated. Such action may be strengthened by interaction between the food industry and scientists who work in the field of diet and population health. However, the primary purposes of the food industry and health researchers are often poorly aligned, leading to the potential for conflicts of interest. These real and perceived conflicts of interest can undermine the credibility of research and researchers, resulting in an erosion of trust among the general public and policymakers, and scepticism of published research.[1-4]

The workshop

Responding to the lack of explicit consensus in population health research about what constitutes acceptable or effective interaction between researchers and the food industry, the Centre for Diet and Activity Research (CEDAR) convened an international workshop on this issue on the 16th and 17th of April 2018. Forty-one researchers from around the world came together with the purpose of achieving clarity regarding appropriate interaction with the food industry. A range of issues were considered, with the majority of the workshop involving in-depth discussion of five themes identified in previous research by CEDAR and relevant to preventing or managing conflicts of interest: publication, transparency, research governance, funding and risk assessment.

Conclusions

There were high levels of agreement on the principal purpose and values that guide dietary public health research. There was strong support for the development of overarching guidance and associated tools to aid decision-making throughout the research process, particularly for risk assessment of potential food companies and governance of research processes, including protocol development, implementation of fieldwork and analysis, and publication. It was agreed that governance and endorsement of the guidance by key research stakeholders (e.g. funders and journals) will be needed. There was some debate about terminology, which differed between scientific disciplines and countries, and needs to be resolved to ensure common understanding.

2.0 Introduction

Poor diet, with its associated adverse nutrition and health outcomes, is a growing global public health challenge.[5] Throughout the world, a substantial and increasing proportion of the food we eat now comes from the commercial food system.[6,7] Achieving healthier diets in populations will therefore require action by food industry players, either voluntary or mandated. Such action has the potential to be strengthened by interactions between the food industry and public sector scientists who work in the field of diet and population health, including those who study nutritional epidemiology, public health nutrition, dietary behaviours and public health interventions for diet at a population level (referred to below as 'dietary public health researchers'). This type of interaction is often actively encouraged by funding bodies and research institutions.[8,9] However, the primary purposes of the food industry and health researchers are often poorly aligned, leading to the potential for conflicts of interest. These real and perceived conflicts of interest can undermine the credibility of research and researchers, resulting in an erosion of trust among the general public and policymakers, and scepticism of published research.[1-4]

The possible negative consequences of researchers interacting with the food industry have been widely highlighted[2,4,10-13] and involve several risks including:

- Immediate reputational risk for researchers and their institutes
- Future reputational risk: we may not be able to control what the food industry does with our data/names in the future
- Misdirection of the research agenda, creating a distortion of the evidence base
- Decreased trust in research outputs.

Despite these concerns, there is currently no explicit international consensus for dietary public health researchers regarding what constitutes acceptable or effective interaction with the food industry.[14,15] This has given rise to disagreements and confusion, further eroding trust and exacerbating scepticism.

At the heart of determining the appropriateness of these interactions with the food industry is ensuring that actual or perceived conflicts of interest are avoided. A conflict of interest is defined as *"a set of circumstances that creates a risk that professional judgement or actions regarding a primary interest will be unduly influenced by a secondary risk"*.[16] Clear guidance to prevent and manage conflicts of interest is important to protect the integrity of researchers' professional judgements[16] and to minimise conditions that would cause a reasonable person (colleague or citizen) to believe that professional judgment has been improperly influenced, whether or not it has.[17]

Financial gain tends to be the focus for conflict of interest guidance.[18] However, financial gain is not the only factor that may lead to conflicts of interest for researchers. Conflicts of interest can also arise from researchers' beliefs, personal relationships and business associations.[15] The desire for recognition, academic advancement, and success in publication

and funding are other powerful influences.[19] A conflict of interest can also be perceived to exist even when it does not. It has been highlighted by some scholars that ultimately, what counts as undue influence is a matter of judgment by others and often depends on the context.[16] Therefore, perception by others of a conflict of interest can often be of equal or greater concern than the actual conflict of interest itself.

Much of the concern with conflict of interest is that it will bias behaviour.[20] This can be at a conscious level but more often bias occurs unconsciously.[20,21] Bias can affect how research questions are selected and framed, the choice of research design, the selection of research participants, and how the data are collected, analysed, interpreted, and ultimately published.[18,21,22] Researchers will often underestimate the severity of bias caused by such conflicts and insist that they can properly navigate their conflicts.[20] However, the evidence suggests that objectivity is sometimes just not humanly possible.[23,24] Clear guidance for identifying conflicts of interest, and finding ways to create or restructure rules and incentives to minimize them, is therefore urgently needed.

The workshop built on research undertaken in the Centre for Diet and Activity Research (CEDAR). This included: a systematic scoping review to identify the principles that have been used or proposed to govern interactions between the food industry and dietary public health researchers; a two-stage Delphi study of dietary public health researchers to identify and build consensus on these key principles; and a survey of key, non-academic stakeholders, to identify their views on the principles. This research was summarised in a Background Document, sent to participants in advance of the workshop, and is available here.

3.0 The workshop

We held a two day workshop at the University Centre in Cambridge on the 16th and 17th of April 2018. Forty-one dietary public health researchers from around the world attended the workshop. Participants came from high-, middle- and low income countries and included leading figures in the field as well as early and mid-career researchers. The research interests of participants encompassed nutritional epidemiology, public health nutrition, dietary behaviours and/or public health interventions for diet at a population level. Participants also had a range of experience of interacting with the food industry, ranging from no contact at all to actively collaborating or receiving food industry research grants. The workshop was hosted by staff from CEDAR and its host department, the MRC Epidemiology Unit. The workshop was facilitated by an independent facilitator, Hilary Samson-Barry. Brief biographies of all participants are listed in here.

A grant from the UK Medical Research Council provided the funding for the workshop. No industry funding or sponsorship was received for the workshop or any work associated with the project. All participants completed a declaration of interests. These are summarised here.

3.1 Overall vision

The overall vision proposed for the workshop was that *'everyone working in dietary public health research has clear guidance to navigate appropriate engagement with the food industry'*. This was agreed by participants at the outset.

3.2 Objectives for the workshop

Several objectives were proposed by the CEDAR team, prior to the workshop. These were:

- To develop our thinking together to inform guidelines on dietary public health researcher (DPHR) interaction with the food industry
- To reflect on the challenges and benefits of DPHR interaction with commercial organisations
- To share work to date on agreeing a set of principles that could guide appropriate interaction between DPHR and the food industry
- To build agreement on the principles to guide DPHR interaction with the food industry in relation to the following themes:
    - Risk Assessment
    - Funding
    - Research Governance
    - Transparency
    - Publication
- To agree on the most appropriate provenance of the proposed guidance
- To agree on a process for turning the principles into the proposed guidance
- To agree on a process for seeking endorsement of the proposed guidance from key stakeholders
- To identify next steps and key milestones, including determining what we should publish from the workshop, and when

3.3 Format

The facilitator took great care to ensure the workshop environment was respectful as this topic can often be contentious. To facilitate discussions the meeting involved:

- A world café examining the primary purpose and core values for dietary public health researchers
- Paired and small group discussions of five themes covering different aspects of dietary public health researchers' potential interactions with the food industry
- Plenary discussion, focused on key areas of contention or lack of consensus.

This document was shared with all meeting participants for comment to ensure that it is a fair and accurate a reflection of the discussions.

4.0 Definitions

It was identified throughout the workshop that clear definitions were required for various terms. Definitions used in the briefing document and in previous research by the CEDAR team included:

- **Conflict of interest**. "A set of circumstances that creates a risk that professional judgement or actions regarding a primary interest will be unduly influenced by a secondary risk".[16]
- The **food industry**. The food industry is a complex, global system incorporating diverse businesses that support the production, processing and supply of most of the food consumed by the world population. Only subsistence farmers, those who survive on what they grow, can be considered outside of the scope of the modern food industry.[25]
- **Dietary public health researchers**. Researchers who undertake population health research into diet, food and nutrition.

It was clear during the workshop discussions that some participants were either not aware of these definitions or not in agreement with them. Specific terms requiring further clarification are highlighted in each of the relevant sections below.

5.0 What would you like to achieve?

The workshop started with a short table discussion asking the participants: "*if you knew you were going to be really delighted (at the end of the workshop), what would you achieve in the next 2 days?*"

Many participants wanted the key issues to be clearly identified and the development of concrete, practical guidance. Participants also stated that this guidance should learn from other sectors and have clear boundaries. However, others identified that more work needed to be done, firstly in unpacking and clarifying assumptions in the background document. There were also concerns about definitions and statements in the background document. Several participants noted that there will never be such a thing as consensus, although it was also agreed that this was not necessary for guidance to be progressed. Finally, it was suggested that the effective dissemination of guidance to those who need it is key to ensuring this is a useful process.

6.0 World Café: What is our primary purpose and what values guide our research?

Our prior research on this topic,[26,27] demonstrated that researchers and their stakeholders are generally highly supportive of principles underpinning interactions with the food industry that are objective and aligned with good scientific practice. However, principles associated with lower levels of consensus were often accompanied by emotive feedback from

participants, or confusion over what was the 'right' decision. In our analysis of these issues, competing priorities appeared to underpin much of this confusion and emotion. For example, we observed conflicts between scientific expertise and peer or public opinion; and between job security and integrity. These competing priorities and subsequent internal struggles faced by dietary public health researchers as to what is the 'right thing to do' illuminate the moral or ethical nature of these issues. To develop ethical guidance to resolve these tensions we require practical principles that are underpinned by our primary purpose and values as dietary public health researchers. This section of the workshop explored the views of participants regarding our proposed primary purpose and core values.

6.1 Primary Purpose

It was put to the group that public health research (including dietary public health research) is guided by a primary purpose or interest and core values. The primary driver of science, in its purest form, is 'to develop or contribute to generalizable knowledge'. Building on this, for dietary public health researchers we suggested the primary purpose was:

To generate, advance and disseminate knowledge aimed at improving the dietary health of the population.

Participants generally agreed with this statement although they felt more clarification was required. In particular, there was concern over the term 'dietary public health researcher' and how this was similar or different to public health nutrition researchers. Caution was expressed regarding the singular focus on diet. Several participants wanted the purpose to acknowledge the wider determinants on the dietary health of the population including socio-economic factors and to incorporate that our role may include influencing policy.

Participants raised several concepts that were missing from the definition including:

- Our role as mentors and developing the next generation of researchers
- Knowledge interpretation and implementation science
- A policy focus

Based on this feedback, we propose the following revised definition:

To generate, advance and exchange knowledge aimed at improving the nutritional status of the population. This requires an understanding and incorporation of the wider determinants of health, building sustainable research capacity, and may involve influencing policy.

6.2 Values

Identifying the core values at the heart of dietary public health research is a critical step in shaping professional behaviour and thus the public's perceptions of our research.

Through the research undertaken for this project, and from reviewing a range of philosophical writings, the research team had identified the values of 'trust', 'integrity' and 'relevance' as important when considering the ethics of dietary public health researchers engaging with the food industry. Participant feedback on these values and their definitions is below.

6.2.1 Trust

Trust in institutions, public officials and the professions is a critical underpinning of a democratic society. Public trust in, and accountability of, the institutions and scientists working in dietary public health research is an important value for the impact of this research.[28]

Most participants agreed that this was a desirable value. It was highlighted that trust needed to be earned and that it was a continuum, not a dichotomy. Participants highlighted several mechanisms to increase trust, including: following the principles of good scientific practice in their research; peer review; transparency and accountability. There was also a discussion over whose trust we should be earning – the public's, policymakers and/or our peers'? Some participants queried whether trust by the public was actually a requirement for science to have an impact and that perhaps the trust of policymakers was more important. Although others argued that if we do not have public trust in our research, we should not be undertaking it. Finally, it was also identified that trust was essential when working with partners and that the consequences of distrust should be considered by researchers to ensure a critical analysis of relevant information.

Based on the feedback from participants, we propose the following revised definition of 'trust':

Trust in institutions, public officials and the professions is a critical underpinning of a democratic society. Public trust in, and accountability of, the institutions and scientists working in dietary public health research needs to be earned. Following the principles of good scientific practice, ensuring peer review of our work as well as transparency and accountability, all help to increase trust and consequently the impact of our research.

6.2.2 Integrity

The value of integrity recognises that individuals have an ethical responsibility for their own conduct to act honestly, avoid conflicts of interest and communicate truthfully with others. Commitment by individuals, scientists, corporations and institutions to behave with integrity helps to build public trust. It incorporates the values of objectivity, honesty, openness, fairness, accountability and stewardship.[29]

A wide ranging discussion about this value took place, with participants agreeing strongly with the importance of the value of integrity. There was considerable

discussion regarding whose integrity this value refers to and the acknowledgement that institutional integrity does not equal individual integrity. Whilst all agreed that individuals need to take responsibility for their own integrity, there were questions around how this plays out in the wider system. There was confusion around the term 'ethical' and what this actually means in this context. Several participants thought we should be working towards a system that should enable individual integrity. This would involve more dialogue and a 'no shame' culture to enable discussion. Another issue raised was whether there is a benchmark of integrity – or is this culturally specific? Finally it was expressed that external factors, e.g. the media, can affect perceptions of integrity.

Based on the feedback from participants, we propose the following revised definition of the value of 'integrity:

The value of integrity recognises that individuals have a moral responsibility for their own conduct to act honestly, avoid conflicts of interest and communicate truthfully with others. Commitment by individuals, scientists, corporations and institutions to behave with integrity helps to build public trust. It incorporates the values of objectivity, honesty, openness, fairness, accountability and stewardship.[29]

6.2.3 Relevance

A central property of dietary public health research is that it is relevant to improving the health of populations. Public health researchers should strive for new knowledge in response to the most important unanswered questions concerning the health of populations.[30]

Feedback around this value included whether there should be particular prioritisation of some (e.g. "vulnerable") populations and whether decreasing inequalities should be a key objective. There were calls for greater clarity regarding what is 'new' knowledge, what makes an unanswered question 'important', and who this guidance is for? Participants also suggested that the concepts of 'monitoring', 'planetary health' and 'evaluation of current knowledge' should be considered for inclusion in the definition of this value. Concerns around definitions and use of terms, e.g. 'dietary public health', 'public health' vs 'population health' were raised again by several participants.

Based on the feedback from participants, we propose the following revised definition of the value of 'relevance:

A central property of dietary public health research is that it is relevant to improving the health of populations. Public health researchers should strive to generate knowledge in response to the most important questions concerning the dietary health of populations and in particular, decreasing inequalities within populations.

7.0 Concerns about interacting with the food industry

Participants discussed their concerns about interacting with the food industry in small groups (table discussions). Many of the themes that emerged were similar to those discussed in relation to values. Participants highlighted that it can be very difficult to decide whether or not to interact with the food industry, whether through informal or formal relationships, or by accepting funding directly or in kind, and for each of these possibilities, under which conditions. Participants frequently mentioned that a tool that could help researchers assess these opportunities would be very helpful. Perceived conflicts of interest and the impact that this could have on a researcher's credibility was frequently stated as a key concern for participants. Another concern was the risk of unconscious bias and the potential for this to be damaging for dietary public health science, in terms of how research is undertaken and how it is reported.

8.0 Themes

The majority of the workshop was spent discussing the main themes and their underlying statements, identified in our systematic scoping review and explored further in our Delphi study and survey of non-academic stakeholders (see Table 1). These statements were mostly taken verbatim from the literature and so one objective of the workshop was to determine whether the statements appropriately reflected consensus among workshop participants, or whether they needed further elucidation. A second objective proposed was to look at those statements from our Delphi study that had not reached a high level of consensus (<80% agreement) and determine whether and how we could increase levels of agreement. The reality of the theme discussions was that most of the statements were discussed, including those that had reached a high level of consensus in the Delphi study. On reflection, this was a critical part of the process to ensure wide ownership of the outputs of the workshop.

All participants discussed research governance, funding and risk assessment in small groups. Half of the participants discussed publishing and the other half transparency, as these were the least contentious themes from our Delphi study. The feedback from the working groups is presented below.

8.1 Publishing

This theme acknowledges the powerful role that journal editors and publishing houses can play in ensuring appropriate standards of governance are met in relation to interactions between researchers and the food industry. Aspects of transparency and research governance were central to this theme and included strategies to ensure clear definitions for authorship and affiliation, and maintaining control over the manuscript and the publishing process by researchers. All statements reached consensus in our Delphi study.

The discussion amongst workshop participants mainly touched on declaring interests within publications. There was general agreement of the need for effective declaration within publications, although there were varying levels of support for the level of disclosure required. Specific issues identified by the working groups included that journals' use of terms is currently uneven, and differing standards can allow researchers to 'game' the publication system (i.e. submit to journals with 'lower' standards). It was proposed that, as a research community, we may be able to ensure greater consistency among journals by proposing agreed international standards.

8.2 Transparency

This theme includes all aspects related to transparency and disclosure, ranging from funding and governance structures through to media releases and conference presentations. Agreeing on a standard for transparency and disclosure is important as it provides those reading or listening to research findings with a basis for drawing their own conclusions regarding potential for bias and the level of confidence they may have in the study. High levels of agreement were seen with all elements of this theme in our Delphi study.

There was widespread support for high levels of transparency among workshop participants. However, some participants raised the notion that transparency does not automatically solve the issue of potential conflicts of interest and may in fact exacerbate them. Several referred to previous studies that have shown disclosure can result in more biased reporting to counteract anticipated discounting of evidence by an audience.[31,32] Other participants suggested that disclosure could be used against them. However, most participants believed it was an important first step.

Regarding the timescale to declare 'interests' participants thought that five years (a figure arbitrarily proposed) was not long enough. However there was no consensus around what time period was sufficient. There was also concern over how many degrees of separation are relevant for disclosure (e.g. should one disclose the interests of one's first degree relatives? And one's institution?). There was also concern about individuals' privacy being impacted and that guidance, in the form of a toolkit, was required to help people think through disclosure. There was also discussion of the disproportionate pressure on individuals regarding responsibility to disclose interests instead of increasing institutional responsibilities.

All participants highlighted concerns about the definition of terms, especially regarding 'interests' vs 'conflict of interests' and the use of the word 'ensure', which implies a rule, instead of 'consider' which implies a principle. Questions were also raised as to whether there is a hierarchy of 'interests' and what this should be. There was a discussion over where interests should be recorded apart from in journals. For example, a new public register or an existing register, such as ORCID, could be used. However, there was

disagreement on how practical this would be, and the options need investigating further.

8.3 Research governance

This theme encapsulates all the processes that researchers undertake to ensure research quality and accountability. Research governance is important because it reduces fraud and misconduct and protects vulnerable groups. There are many existing national and international frameworks to guide researchers in these processes. Most principles in this theme had reached consensus in the Delphi study.

This theme had a large number of statements that were discussed individually by each group. Participants highlighted that three principles (3.1, 3.2, 3.8) seem to be describing good research practice or governance in general. Participants expressed that we should not replicate such existing guidance (e.g. reporting guidelines, such as CONSORT and STROBE). Concern was raised regarding the feasibility of three statements (3.5, 3.6, 3.7), with the lack of resources in low and middle income countries in particular making these statements difficult to implement. Several groups disagreed with the statements related to research and industry partners having 'equal power', asserting that the food industry representatives should not be members of research steering groups, let alone have equal power.

Further clarity is needed on the meaning of the term 'public benefit', the section on monitoring conflicts of interest, and specific proposals for engaging independent members of the public in research governance roles. Some participants did not agree with involving the public in research governance unless it was relevant to the research project. It was highlighted that public involvement in governance is not a panacea for remedying conflicts of interest and that members of the public can also exhibit such conflicts. Alternatively some participants thought involving other (professional or organisational) 'stakeholders' may be more appropriate. Finally, concerns were raised regarding commercial restrictions on data for use in research, which means that ownership cannot always rest with researchers and that provenance of the data needs to be stated clearly in contractual agreements with companies.

8.4 Funding

The theme of funding included two elements: the appropriateness of accepting funds from the food industry; and the governance processes around accepting funds. Clarity on this theme is important because it can impact on peer and public trustworthiness of research outputs. This theme was the most contentious of all identified themes in our research, with mixed responses from Delphi participants.

Generally, there was a high level of support among workshop participants for the establishment of an arrangement whereby an independent third party could manage funding from food companies, dispersing such funds to researchers via unrestricted and

unattributed grants. However, there were mixed views around the acceptability of researchers directly accepting funds from the food industry. Some participants stated that accepting funding from the food industry was never appropriate and other participants went further and stated the same sentiment should apply across the board to all commercial organisations. It was stated that any commercial organisation engaging with dietary public health researchers is trying to buy influence. However, similar views were expressed regarding charities. One group also discussed 'firewall organisations' (e.g. non-profit organisations who may accept food industry money and distribute it to researchers) and suggested that money should not be taken from them if food industry funding makes up more than a small proportion (e.g. 20%) of its funding. Reasons for this stance were that food industry funding of research is known to contribute to biased research outcomes, plus the negative perception of accepting funding on researchers' credibility.[2-4]

Alternatively, others felt that in some contexts funding from the food industry may be acceptable. Difficulties accessing alternate sources of funding, particularly for researchers in low and middle income countries, and for early career researchers, were raised a number of times. Some participants suggested that we need to identify support mechanisms that can be put in place in these contexts to decrease reliance on (or stop) food industry funding of research. However it was also suggested that rules around accepting funding should be based on the intent of the research not the intent of the food company, as there may be times when the interests of a food company and researchers align well (e.g. developing lower sodium products). There were greater levels of support for accepting funding from non-food related industries and, in particular, if the company's interests align well with the public health agenda. There were requests for clarity around the term 'non-designated' or 'unrestricted' funding, and whether accepting prizes and awards (or other forms of funding in kind) should be treated in the same way as direct research funding.

8.5 Risk assessment

This theme is multifaceted and involves the many considerations that may occur when assessing whether interactions with a food industry company are acceptable for dietary public health researchers, as well as assessing the type of interactions. Undertaking a risk assessment is important for researchers as it can highlight any potential risks or benefits of interactions that may need to be managed or mitigated before a formal agreement is developed. It may also help researchers to decide that an interaction is not appropriate and therefore should not proceed. Just over half of the statements on risk assessment (60%) reached consensus in the Delphi study.

When discussing the statements in this theme, it was apparent that a frequent response was 'it depends'. The complex nature of this issue led many participants to request the development of a tool to aid decision making. Such a 'thinking tool' could cover the

issues raised in this section and could highlight whether the interaction was 'low risk', 'medium risk' or 'high risk'.

Participants also discussed governance of risk assessment and whether there should be an independent body policing or advising on this. Some felt expanding the role of institutional (e.g. university) ethical review boards would be able to undertake this task, whereas others felt an entirely independent body made up of bioethicists and/or lawyers would be better.

There were also many comments noted for individual statements within this theme (see appendix A for list of statements). Statements where all participants generally agreed included 2.4 (with caveats) and 2.17. There was also agreement over the removal of statements 2.3 and 2.8, with most seeing 2.8 as unworkable because defining what is healthy or unhealthy can be difficult, and that other principles (specifically 2.2) overrule it. There was also the suggestion to combine 2.6 and 2.7 and to be very clear if these are rules or principles. The consensus was they should be principles and that we should allow researchers to exercise judgement.

Throughout the discussions of the different themes participants identified that it was not only the responsibility of researchers to make a change but also institutions, funders and journals. Related to the responsibilities of wider stakeholders was the discussion of whether the food industry should be involved in this process. Martin White explained that the food industry will be consulted at some point regarding the development of this guidance, however, he felt it was important that the research community had consensus on their priorities and principles first before any sort of consultation occurs with the food industry.

9.0 What is good guidance and who needs to endorse it?

Participants discussed what good guidance for researchers considering interacting with the food industry would look like. Groups reported their views in a plenary session and the following key aspects were synthesised from this feedback. Good guidance would:

- Protect and empower researchers
- Be context specific and culturally sensitive
- Maintain or enhance reputation
- Inform judgement and action
- Incorporate and build on existing good research practice
- Be supported (or recognised) by key partners
- Have impact with change agents

There was widespread support for the guidance to be accompanied by a toolkit and flowchart to aid decision-making throughout the research process, and this should be provided via an online platform to increase the utility and availability of guidance.

The process of endorsement was also discussed and the bodies that should be involved in this included: all disseminators of knowledge; funders; nutrition associations; and international bodies like WHO, EU.

When discussing who could produce effective guidance there was wide ranging support for CEDAR taking a lead role in this process from all participants attending the workshop. However, a wide range of offers of support came from workshop participants, both during the workshop and in subsequent correspondence.

Discussions around the process of producing guidance included numerous suggestions:

- Pilot test the guidance in workshop participants' own institutions
- Recognise that this group is not an international body and therefore diplomacy is required to progress endorsement of the guidance
- Acknowledge local contexts, in particular the constraints of low- and middle-income countries
- Consider involving journal editors in the process
- Explicitly state what is in scope and what is not
- Explicitly state who is the target audience
- Consider whether the guidance will be time limited
- Consider including case studies illustrating each stage of the research follow chart as well as frequently asked questions
- Ensure that principles are well-formed and can be formally evaluated.

Finally, there was a suggestion that the process of dissemination should occur in two stages. Firstly, a universal declaration that can be quickly developed and has the intent of highlighting that 'this is important' and would encourage momentum and visibility. This statement would then be followed by more detailed guidance at a later date. However, others wanted to prioritise the development of the guidance. In practice, it was concluded that these two stages could proceed in parallel.

10.0 Where is more work needed?

Participants were asked whether any of the issues that we had discussed required more work. All topics proposed in group discussions were displayed on flip charts. Each participant was able to cast three votes for the topics they believed should be afforded the highest priority for further work. The table below outlines the priorities identified and the number of participant votes each received.

Priorities	Votes
Achieve greater clarity on terms and definitions e.g. dietary public health researchers, public health nutrition, food industry.	20
Development of practical tools to support guidance.	14
Increase understanding and appreciation of the importance of potential conflicts of interest. Clear information around conflicts of interest needs to be made widely available and needs to avoid assumptions.	13
Build capacity on expertise with regard to managing conflicts of interest (particularly in the global south).	12
Identify and map evidence on conflicts of interest and where there are gaps. Need to differentiate between unreliable opinions vs evidence and facts.	12
Develop an understanding of the potential impacts on quality and quantity of research if the guidance is followed in low and middle income countries.	11
Consider and manage the unintended consequences beyond dietary public health research (e.g. If industry stops giving money to researchers, who do they give it to? Or the potential for conflict with researchers' own institutions with regard to their policies on industry conflicts of interest).	11
What is the impact on multidisciplinary research or other research areas funded by the food industry? Undertake constituency building in these other areas of research (e.g. safe water, physical activity).	10
Think about dissemination strategy and make people aware of the guidance	5

11.0 Priorities for next steps

A final activity for the workshop participants was for each person to note down what they believed should be the key next steps in progressing the issues that had been discussed in the workshop. Participants were also asked what they could personally offer to support this process. The priorities identified by all participants were analysed and grouped into seven key steps.

1) Develop and complete guidance with a focus on clarifying language and terminology.
2) Develop thinking tools or checklists to accompany the guidance and aid decision-making.
3) Ensure the workshop group participants plus other key stakeholders are involved in steps 1 and 2.
4) Pilot the guidance and tools.

5) Consider governance of the guidance including whether an external oversight group is necessary.
6) Undertake a process to seek endorsement of the guidance and supporting tools, and then wide dissemination.
7) Consider further research that needs to be undertaken in this space to fill gaps in existing knowledge.

Numerous offers of help from all workshop participants were provided for all the steps outlined above.

12.0 Conclusion

To conclude, the workshop participants were asked to state what had they found most useful about attending the workshop. The most popular responses included: *hearing the diversity of views present in the room; the respectful sharing of experiences; the nuances in the issues discussed and having the time to think deeply about these issues*. Martin White closed the workshop, summarising the two days, outlining the steps forward and thanking everyone for their time and contributions to the discussions.

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Appendix A – Results from the Delphi survey of dietary public health researchers and the survey to stakeholders

= less than 60% agreement
= 60-79% agreement
= more than 80% agreement

1. Funding

The theme of funding included two elements: the appropriateness of accepting funds from the food industry; and the governance processes around accepting funds. Clarity on this theme is important because it can impact on peer and public trustworthiness of research outputs. This theme was the most contentious of all identified themes with mixed responses from participants.

Statement	Round 1 Delphi Researchers **N = 100**, Number (%) agreeing with statement	Round 2 Delphi Researchers **N = 92**, Number (%) agreeing with statement	Stakeholder Survey **N = 84** Number (%) agreeing with statement
1.1 A pool of funding from the food industry which is independently administered by a publically accountable third party should be created	74 (74)	79 (86)	53 (63)
1.2 A system where industry provides funding to research institutions, not individual researchers or research units, should be created	34 (34)	29 (32)	25 (30)
1.3 Researchers should not accept funds from the food industry	47 (47)	40 (43)	59 (70)
1.4 Researchers should not accept funds from processed food companies	53 (53)	51 (55)	67 (80)
1.5 Researchers should not accept funds from any commercial organisation	24 (24)	21 (23)	25 (30)
For those who accept funding from the food industry			
1.6 Researchers should have no commercial interest in the product being researched	91 (91)	Not included in Round 2	80 (95)
1.7 Funding from industry should reflect the full cost of the research (e.g. using standard academic costing) and not more than this amount	70 (70)	74 (80)	55 (65)
1.8 Industry funding should be non-designated	70 (70)	65 (71)	63 (75)
1.9 There should be no involvement of a food industry funder in any aspect of a research project	70 (70)	67 (73)	70 (83)

2. Undertake a thorough risk assessment

This theme is multifaceted and involves the many considerations that may occur when assessing whether a food industry company is acceptable for DPHRs to engage with as well as assessing the type of engagement. Undertaking a risk assessment is important for researchers as it can highlight any potential risks of engagement that may need to be mitigated or managed before a formal agreement occurs or you may decide this is not possible and therefore the engagement does not proceed. Just over half of these statements (60%) reached consensus in our studies.

Statement	**Round 1 Delphi Researchers N = 100**, Number (%) agreeing with statement	**Round 2 Delphi Researchers N = 92**, Number (%) agreeing with statement	**Stakeholder Survey N = 84** Number (%) agreeing with statement
2.1 Have a clearly identified system to identify and assess interests of potential partners	95 (95)	Not included in Round 2	79 (94)
2.2 A partnership should only be initiated if it will help advance the public health goal	74 (74)	73 (79)	53 (63)
2.3 Only enlist partners who are committed to long term funding and engagement	35 (35)	32 (35)	19 (23)
2.4 Only enlist partners who are committed to sharing of research data arising from the research project	77 (77)	79 (86)	74 (88)
2.5 Only enlist partners who operate in an ethical manner and uphold the human rights of women, men and children	89 (89)	Not included in Round 2	75 (89)
2.6 Ensure the organisational values and overarching goals of the partners are compatible	81 (81)	Not included in Round 2	60 (71)
2.7 Ensure all partners have shared objectives and a shared approach to the research question and activities	77 (77)	74 (80)	61 (73)
2.8 Avoid companies whose objectives and/or goals are related to the increased production, supply or demand of 'unhealthy food' products and/or to the promotion of unhealthy and unsustainable ways of eating and producing food	76 (76)	69 (75)	69 (82)
2.9 Assess whether the partnership could undermine the integrity or trustworthiness of my institution	98 (98)	Not included in Round 2	83 (98)
Risk Assessment of type of engagement			
2.10 Consider whether the proposed engagement would be acceptable across institutions and national borders'	68 (68)	72 (78%)	71 (85)
2.11 Be guided by generic international protocols and frameworks (e.g. World Health Organisation) on appropriate types of engagement	91 (91)	Not included in Round 2	72 (85)
Ensure public benefit is at centre of agreement			
2.12 Consider whether the partnership provides maximum benefit to society 2.13 Consider what the public would think about this arrangement	89 (89) 84 (84)	Not included in Round 2	68 (81) 68 (81)

Statement	Round 1 Delphi Researchers N = 100, Number (%) agreeing with statement	Round 2 Delphi Researchers N = 92, Number (%) agreeing with statement	Stakeholder Survey N = 84 Number (%) agreeing with statement
Consider possibility of reputational damage and loss of trust			
2.14 Consider what my colleagues would think about this arrangement	71 (71)	70 (76)	64 (76)
2.15 Decline to give a presentation at events sponsored by the food industry	Not included in Round 1	42 (46)	24 (29)
2.16 Decline funding (e.g. travel costs or honorarium) from the food industry to present research findings at an event	Not included in Round 1	58 (63)	47 (56)
2.17 Do not 'ghost-write' publications for the private sector	92 (92)	Not included in Round 2	74 (88)
2.18 Do not accept gifts or hospitality if it compromises or appears to compromise objectivity	97 (97)	Not included in Round 2	84 (100)
2.19 Do not participate in undisclosed paid authorship arrangements in industry-sponsored publications or presentations	97 (97)	Not included in Round 2	82 (98)
2.20 Do not allow the commercial partner to co-brand (e.g. use their logo) on the research project or related material	77 (77)	73 (79)	62 (74)

3. Research governance

This theme encapsulates all the processes that researchers undertake to ensure research quality and accountability. Research governance is important because it reduces fraud and misconduct and protects vulnerable groups. There are many existing national and international frameworks that guide researchers in this process.[33-35] Most principles in this theme reached consensus.

Statement	Round 1 Delphi Researchers N = 100, Number (%) agreeing with statement	Round 2 Delphi Researchers N = 92, Number (%) agreeing with statement	Stakeholder Survey N = 84 Number (%) agreeing with statement
3.1 Clearly state & agree goals, objectives, roles and responsibilities and accountability before work commences	97 (97)	Not included in Round 2	83 (99)
3.2 Plan research so it is designed objectively and is scientifically sound in its approach	98 (98)	Not included in Round 2	Removed for stakeholders
3.3 Establish up-front control and ownership of the data by the researcher/s irrespective of the funding source	Not included in Round 1	86 (93)	83 (99)
3. 4 Provide open access to anonymised data and analyses once results are published	Not included in Round 1	81 (88)	75 (89)

3.5 Data analysis should be done by statisticians independent of the researcher/s who designed and conducted the study	52 (52)	43 (47)	51 (61)
3.6 Undertake random audits of data provided by food companies for research projects	76 (76)	76 (83)	71 (85)
3.7 Secure oversight of the research by a non-conflicted third party	74 (74)	73 (79)	68 (81)
3.8 Require all trials or other studies in dietary public health to be registered at time of initiation of the study	89 (89)	Not included in Round 2	72 (86)
Ensure partners have equal power			
3.9 If the food industry is supporting research by providing direct funding or data, ensure they do not have undue influence over research by having a diversity of partners on project steering committees (e.g. foundations, NGOs, consumers)'.	Not included in Round 1	76 (83)	76 (90)
3.10 The research institution must be able to independently criticize a commercial-sector entity for issues unrelated to the partnership	96 (96)	Not included in Round 2	80 (95)
Ensure public benefit is at centre of agreement			
3.11 Engage independent members of the public in the process of defining research problems and subjecting research projects to ongoing critical scrutiny	71 (71)	69 (75)	58 (69)
Management of conflict(s) of interest			
3.12 Have a clearly identified system to identify, assess and manage the interests of all stakeholders	97 (97)	Not included in Round 2	82 (98)
3.13 Recuse stakeholders from committee (or similar) decision making where there may be an actual or perceived conflict	88 (88)	Not included in Round 2	76 (90)
3.14 Continuously monitor for conflicts of interest	96 (96)	Not included in Round 2	Removed for stakeholders
Consequences			
3.15 Establish clearly stated exit mechanisms for partners	96 (96)	Not included in Round 2	78 (93)
3.16 Establish sanctions with effective enforcement for violation of conflict of interest including reprimands, fines, dismissal	91 (91)	Not included in Round 2	71 (85)

4. Transparency

This theme includes all aspects related to transparency and disclosure ranging from funding and governance structures through to media releases and conference presentations. Agreeing on a standard for transparency and disclosure is important as it allows those reading or listening to research findings with a basis for drawing their own conclusions regarding potential for bias and confidence in the study. High levels of agreement were seen with all elements of this theme. However, participants' highlighted greater clarity was required around wording of some statements.

Statement	**Round 1 Delphi Researchers N = 100**, Number (%) agreeing with statement	**Round 2 Delphi Researchers N = 92**, Number (%) agreeing with statement	**Stakeholder Survey N = 84** Number (%) agreeing with statement
4.1 Explicitly report funding, governance structures, research frameworks and findings and ensure it is publically-available	98 (98)	Not included in Round 2	83 (99)
4.2 All individuals involved in a research partnership should undertake full disclosure including financial, personal and professional interests over the past 5 years	93 (93)	Not included in Round 2	80 (95)
4.3 All individuals involved in research partnership should disclose interests of their spouse/partner, minor children, employer and business partners	73 (73)	75 (82)	66 (79)
4.4 Ensure all presentations and media releases from an industry partner, regarding any research project to which they have contributed direct or in-kind funding, are endorsed by the research partner	77 (77)	79 (86)	66 (79)
4.5 Require full disclosure of funding sources and financial interests in research media releases	96 (96)	Not included in Round 2	83 (99)
4.6 Require a declaration of interests slide in all presentations and a written statement on any poster presentations	97 (97)	Not included in Round 2	82 (98)
4.7 Establish a public database of conflicts of interests in dietary public health research	86 (86)	Not included in Round 2	66 (79)

5. Publication

This theme acknowledges the powerful role that journal editors and publishing houses can play in ensuring standards are met. Aspects of transparency and research governance were central to this theme and included strategies to ensure clear definitions around authorship and affiliation and control over the manuscript by the research partner. All statements reached consensus in our studies.

Statement	**Round 1 Delphi Researchers N = 100**, Number (%) agreeing with statement	**Round 2 Delphi Researchers N = 92**, Number (%) agreeing with statement	**Stakeholder Survey N = 84** Number (%) agreeing with statement
5.1 Academic researchers should include all potential conflicts of interests, including full affiliation as well as disclosure of industry funding and/or industry affiliation in research publications)	59 (59)	90 (98)	84 (100)

5.2 Ensure research partner retains full rights to publish all results, including those unfavourable to the funder	98 (98)	Not included in Round 2	84 (100)
5.3 Ensure the research partner has control over the preparation and approval of peer-reviewed manuscript	98 (98)	Not included in Round 2	81 (96)
5.4 Establish clear definitions around sponsorships and author affiliations to be used in publications, such as: industry funded, non-industry-funded, and unknown/unclear sponsorship	99 (99)	Not include in Round 2	81 (96)
5.5 All conflicts of interest should be declared at the beginning of research articles in print and online	Not include in Round 1	82 (89)	77 (92)