

Open Research Online

The Open University's repository of research publications and other research outputs

Protocols to monitor marketing of unhealthy foods to children: Comparison and evaluation of existing protocols, with stakeholder consultation

Other

How to cite:

Muc Da Encarnacao, Magdalena and Tatlow-Golden, Mimi (2023). Protocols to monitor marketing of unhealthy foods to children: Comparison and evaluation of existing protocols, with stakeholder consultation. Best-ReMaP EU JA.

For guidance on citations see [FAQs](#).

© [not recorded]

Version: Version of Record

Link(s) to article on publisher's website:

<https://bestremap.eu/wp-content/uploads/2023/01/WP6.4-Food-Marketing-Monitoring-Global-Protocols-Review-Best-ReMaP.p>

Copyright and Moral Rights for the articles on this site are retained by the individual authors and/or other copyright owners. For more information on Open Research Online's data [policy](#) on reuse of materials please consult the policies page.

oro.open.ac.uk



Best-ReMaP

Healthy Food for a Healthy Future

**Protocols to monitor marketing of
unhealthy foods to children:
Comparison and evaluation of existing
protocols, with stakeholder consultation**

Grant Agreement Number 951202

Dr Magdalena Muc and Dr Mimi Tatlow-Golden WP6.4

21 / 09 / 2022



This publication was funded by the
European Union's Health Programme
(2014-2020)

Contents

- Contributors and Acknowledgements 3
- Abbreviations 4
- Glossary 5
- Executive summary 6
- Summary of recommendations for design of EU-wide monitoring protocol 7
- Design features and structure – requests from MS and experts 12
- Next steps 12
- Introduction 13
 - The Joint Action Best-ReMaP 13
 - About Work Package 6 - Reducing the Marketing of Unhealthy Foods to Children 14
 - Context 15
- Defining terms and introducing marketing and monitoring techniques 17
- Identification of protocols and process of review 23
- Comparison of protocols 31
 - Definition of Children 31
 - Nutrient Profiling Model 32
 - Ethical and privacy issues 33
 - Involving children in the process 34
 - Mapping the marketing landscape 36
 - Stepwise approach 38
 - Monitoring ‘power’ variables 39
- Monitoring of different channels 41
 - TV live and streaming 41
 - Print (magazines, flyers) 43
 - Outdoors and community venues 43
 - Cinema 44
 - Sports and other event sponsorship 45
- Digital media 46
 - Social media 49
 - Websites 51

Video and video sharing platforms 52

Influencer marketing 52

Video sharing platform monitoring (e.g., YouTube) 53

Advergames and online games 53

Coding the content55

Summary and conclusion56

 Concluding Recommendations..... 59

Annex 1 – Partners participating in the WP6.4 task60

Annex 2 – WP6 tasks61

Annex 3 - Consultations with WP6.4 partners to identify MS support needs, and expert review.....62

 M6.5: Workshop to implement the EU protocol to monitor food marketing to children 62

 Summary of MS requests and WP 6.4 responses..... 63

 1st WP6 EU Expert Group meeting 64

Annex 4. Summary of M6.5: A workshop towards implementing an EU protocol to monitor food marketing to children66

References.....69

Content of tables

Table 1: Five steps in the WHO CLICK Framework.....28

Table 2 Marketing channels covered by the four protocols.....30

Content of figures

Figure 1: JRC code checklist of monitoring and evaluation of a code of conduct.....16

The content of this publication represents the views of the author only and is his/her sole responsibility; it cannot be considered to reflect the views of the European Commission and/or the European Health and Digital Executive Agency (HaDEA) or any other body of the European Union. The European Commission and the Agency do not accept any responsibility for use that may be made of the information it contains.

Contributors and Acknowledgements

This report was prepared by Dr Magdalena Muc and Dr Mimi Tatlow-Golden (The Open University).

We would like to thank our Best ReMaP WP6 colleagues: Ursula O'Dwyer (Irish DoH and WP6 Leader), Maria João Gregório (DGS Portugal and WP6 Leader), Janas Harrington (UCC Ireland), Ana Contreras Navarro (UCC Ireland) and Margarida Bica (DGS Portugal) for their contribution to this work and the review of this document.

We are also thankful for the support provided by the experts including Kathrin Hetz and Kremlin Wickramasinghe from the World Health Organization Regional Office for Europe, NCD Office, Dr Bridget Kelly from the University of Wollongong, Professor Emma Boyland and Dr Anna Coates from the University of Liverpool.

We would like to thank all the collaborators who participated in the 6.4 workshop in May 2022 which supported the development of this document, especially colleagues from the Slovenian National Institute for Public Health, Direcao Geral de Saude, Portugal, and the Finnish Institute for Health and Welfare who shared their valuable experience in monitoring.

We would like to highlight the invaluable contributions made by Joint Action collaborators: Austria, Belgium, Bosnia and Herzegovina, Republic of Srpska, Bulgaria, Croatia, Cyprus, Estonia, Finland, France, Greece, Ireland, Latvia, Lithuania, Portugal, Romania, who reviewed this document or provided their feedback during the workshop or through emails and meetings.

The following members of the Joint Action expert group supported our work package with their advice and feedback: Alice Pisana (European Commission DG SANTE), Amandine Garde (University of Liverpool), Eva Grammatikaki (JRC) Jane Landon (Health inequalities expert), Jo Jewell (UNICEF), Kathrin Hetz (WHO Europe), Marco Silano (ISS Italy, Best-ReMaP WP4 Leader), Michele Cecchini (OECD), Mike Rayner (Oxford University), Mojca Gabrijelčič Blenkuš (NIJZ Slovenia, Best-ReMaP Scientific Coordinator), Natalia Zampieri (European Commission DG SANTE), Samuele Tonello (EuroHealthNet, Best-ReMaP WP4 Leader).

Cite this report

Muc, M, Tatlow-Golden, M. (2022). Protocols to monitor marketing of unhealthy foods to children: Comparison and evaluation of existing protocols, with stakeholder consultation: A Best-ReMaP publication.

Abbreviations

WHO	World Health Organization
INFORMAS	The International Network for Food and Obesity/non-communicable diseases Research, Monitoring and Action Support
NORDIC Protocols	Monitoring food marketing to children: A joint Nordic monitoring protocol for marketing of foods and beverages high in fat, salt and sugar (HFSS) towards children and young people Funded by the Nordic Council of Ministers
NPM	Nutrient Profile Modelling
WHO-Euro	World Health Organization Regional Office for Europe
WHO CLICK	Monitoring and restricting digital marketing of unhealthy products to children and adolescents: report based on the expert meeting on monitoring of digital marketing of unhealthy products to children and adolescents (2019) WHO. Regional Office for Europe.
WHO PROTOCOLS	Monitoring of Marketing of Unhealthy Products to Children and Adolescents – Protocols and Templates, WHO
UNCRC	United Nations Convention on the Rights of the Child

Glossary

Term	Definition
Advertising	Paid public presentation and promotion of ideas, goods, or services by a sponsor that is intended to bring a product to the attention of consumers through a variety of media channels such as broadcast and cable television, radio, print, billboards, the Internet, or personal contact. Advertising is only one form of marketing (1)
Best Practice	A relevant policy or intervention implemented in a real life setting and which has been favourable assessed in terms of adequacy (ethics and evidence) and equity as well as effectiveness and efficiency related to process and outcomes. Other criteria are important for a successful transferability of the practice such as a clear definition of the context, sustainability, intersectorality and participation of stakeholders (2)
Child	Every human being below the age of eighteen years old unless, under the law applicable to the child, majority is attained earlier. (3)
Marketing	Any form of commercial communication or message that is designed to, or has the effect of, increasing the recognition, appeal and/or consumption of products and services. It comprises anything that acts to advertise or otherwise promote a product or service (4)
Unhealthy food	Any food and beverage with excessive amounts of total fat, saturated fat, trans-fatty acids, free sugar and/or non-sugar sweeteners, and/or salt, that should not be permitted to be marketed to children as designated by the Nutrient Profile Model (5)

Executive summary

Work Package 6.4 of the EU Best-ReMap Joint Action (2020-23) is tasked with reviewing best practices in monitoring the marketing of unhealthy foods and non-alcoholic drinks and will develop, test, and adapt an **EU-wide Monitoring Protocol** to support Member States' monitoring of unhealthy food marketing to children, with a particular focus on digital marketing

This document was created to fulfil Task 6.4.1 of Work Package 6 of Best-ReMaP. The aim of 6.4.1 is to identify, describe and compare the existing global protocols to monitor marketing of unhealthy food and non-alcoholic drinks to children, identifying the best practices in monitoring that could feed into the design of an EU-wide harmonised and comprehensive monitoring protocol for reducing unhealthy food marketing to children (JA Task 6.4.3; Deliverable D6.3).

This review consulted with WP6.4 partners (Member States and technical experts) to understand their needs regarding the design of an EU-wide monitoring protocol. A knowledge and experience sharing workshop entitled "*Monitoring food advertising: Progress, experiences, challenges, solutions*" (JA Task 6.4.4, Milestone M6.5) took place on 9th of May 2022, in which countries shared their experiences in using marketing monitoring protocols and articulated their needs and expectations of the EU-wide monitoring protocol.

Prior to holding this workshop, four global monitoring protocols were identified and reviewed: from the INFORMAS consortium, the Nordic Council of Ministers, and the World Health Organization (WHO) (Protocols and Templates, and the WHO CLICK framework). The design, content and scope of these four protocols are described and compared in this report, summarising the existing tools available to measure marketing in different channels, with a special focus on the digital marketing. Recommendations for the design of the EU-wide monitoring protocol are made and these will feed into further work on this Task.

The result of this review is a set of recommendations on the design and content of key elements of the monitoring protocol. These are presented below with the key recommendations being:

1. Devise an EU-wide marketing monitoring framework that links to existing protocols hosted by WHO-Euro;
2. Assess routes to providing protocols for event-based sponsorship marketing and outdoor marketing;
3. Provide further contextual information and guidance for MS, particularly relating to digital marketing;
4. Provide further supporting materials for MS new to food marketing monitoring as a practice especially for the preparatory stages and to support resource planning;
5. Provide support materials for MS on working with and involving children and taking a child rights stance;
6. Identify the optimal site for hosting the EU-wide protocols to facilitate visibility, access and knowledge-sharing; and
7. Explore opportunities for knowledge sharing between MS on monitoring marketing.

Further recommendations addressing principles and technical details of monitoring, drawn from the protocol comparisons within this document, follow on from each section and are summarised here:

Summary of recommendations for design of EU-wide monitoring protocol

Definition of Children

Recommendation

- Marketing monitoring should be driven by a child rights-based approach and should assess the exposure of all children under the age of 18
- Separate analyses are recommended for different age groups (12 years and under; 13-17 years), as media use, food preferences and marketing exposure may vary
- When applying a stepwise approach, adolescents should not be excluded from monitoring
- Monitoring should take a developmentally informed view, considering not only age-based variations in marketing strategies, but also that appeals from older role models are impactful for younger children.

Nutrient Profiling Model

Recommendation

- All Member States should use the WHO-Euro NPM when assessing marketing to facilitate cross-EU comparability
- Additionally, Member States should apply any criteria specified in country-specific codes and/or regulations to measure code /regulation compliance.

Ethics and privacy issues

Recommendation

- Ethical considerations and children's privacy should be at the core of all monitoring activities.
- Ethical practice should be clearly described for all monitoring activities, especially recruitment of children and data collection.
- Consent given by children must be valid and not subject to undue influence (including financial factors (6)).
- This is particularly the case for digital marketing, which has complex privacy and data protection implications, particularly when employing screen capture methods, where the only way to obtain reliable data on children's exposure involves access to their digital devices.
- Activities that involve screening social media should be aware of platforms' terms and conditions

Involving children in the process

Recommendation

- Children are experts in their own lives and are stakeholders in monitoring unhealthy marketing.
- Consulting children and young people and their meaningful engagement in the process can improve the quality, accuracy and efficiency of the monitoring process, as well as realizing their rights.
- If data on children's media use and food preferences are not available, surveys, interviews and focus groups should be run to obtain these.
- Findings should be disseminated to children to involve and inform them about actions aimed at improving their food environment. Where possible, it is best practice to involve children in this process.

Mapping the marketing landscape

Recommendation

- Mapping activities should be the first step in the monitoring process. This facilitates decision making and improve accuracy and representability of the results.
- Mapping activities should not be restricted to media designed for or specifically directed at children. All media channels, programmes and platforms *used by* children are assessed.
- Mapping activities should incorporate a range of sources and stakeholders to generate effective representation of the marketing landscape.

Stepwise approach

Recommendation

- A stepwise approach is a useful feature that helps protocol users design activities based on available resources and objectives.
- A structured guidance on the stepwise approach could allow comparability
- Steps can be based on adjusting the range of monitored media, channels, methods or indicators of marketing content.
- There is little evidence that older children's advertising literacy protects them from the manipulative effects of marketing so the stepwise approach should not limit monitoring to younger children

Monitoring 'power' variables

Recommendation

- Power is an important indicator of marketing's messaging and effectiveness and should be monitored across all channels.
- The presence of elements aimed at children and young people (characters, popular celebrities, language etc.) should be recorded. However, the absence of such elements cannot necessarily be taken to infer that the marketing does not impact on certain age groups.
- The context in which marketing is presented can affect its power to impact children and should also be recorded.

TV live and streaming

Recommendation

- TV is still a popular medium used by children and is still recommended as a marketing channel to monitor.

- All TV channels popular with children should be monitored – not only children’s channels. Monitoring should cover children’s peak viewing times for these channels.
- Monitoring should also cover peak general audience viewing, even if children form smaller proportions of the audience, as such programming may reach large absolute numbers of children.
- Monitoring should not be limited to commercial breaks; for example extensive marketing during large sports events through sponsorship should be monitored (see sports sponsorship).

Print (magazines, flyers)

Recommendation

- The popularity of marketing through flyers (e.g fast food/take-away) should be assessed to decide on its inclusion. With increasing home food delivery, these may be increasingly relevant.
- The popularity of magazines is decreasing especially among young people so, unless local data indicate their popularity, this should not be a priority channel if resources are limited

Outdoors and community venues

Recommendation

- Outdoor marketing in areas frequented by children is an important source of exposure.
- Advertising on public transport should be included on routes that children frequently take for school and leisure.
- New automated methods may be less resource heavy.

Cinema

Recommendation

- Cinema may form one element in a stepwise approach. It is likely to be less relevant for overall exposure than other media channels.

Sports sponsorship and other big events.

Recommendation

- Extensive sports sponsorship is found on TV broadcasts, streaming, and at sporting sites. Many have very large child audiences. The impact of sports sponsorship as a form of marketing is likely to be heightened by the presence of sports star role models and by the ‘health-washing’ impact of sporting activity.

- Sports sponsorship should be included as a core component in marketing protocols, whether local codes or regulations restrict this practice or not.
- A protocol to monitor a multi-channel marketing around large sports events should be developed
- Other big events such as festivals and concerts that frequently involve marketing of unhealthy foods or drinks and have large child audiences should be included in the protocol

Digital media

Recommendation

- Digital marketing is the most complex to monitor and requires careful assessment of researcher and study capacity (financial, skills and time), mapping of the ecosystem, and assessment of the most impactful features within a stepwise approach.
- There is a body of evidence regarding marketing on websites and for advergames but these are now less relevant.
- Social media and video sharing platforms are among the most relevant digital channels to monitor. Monitoring these can involve straightforward content analysis of brand or influencer activities on these platforms. More complex studies involving automated data collection or screen capture are also possible but require larger budgets and technical expertise.
- Influencer marketing and brand activity on online gaming platforms should also be considered.
- Digital marketing monitoring, even where elements are automated (e.g., metadata capture, or image analysis), requires a considerable investment of time in data management.
- Ethical and privacy implications are considerable for many aspects of digital marketing monitoring and substantial time allocations should be made for these processes.

Coding the content

Recommendation

- Pre-existing templates and protocols ensure that studies across Member States are comparable.
- Provision should be made for stepwise features in templates and protocols to allow MS to adapt for capacity as needed.
- Templates and protocols should be versioned so they can be updated as the media and marketing ecosystem changes.

Design features and structure – requests from MS and experts

Recommendations

- Aim at the monitoring program to be comprehensive (monitor all channels that are a significant source of exposure) and regular. It is recommended to repeat the monitoring the same channel biannually to assess trends and impact of any interventions.
- Indicate a clear stepwise approach to allow for adjustments according to available resources
- Include a preparatory stage and resource planning support for MS new to monitoring
- Use existing protocols with which MS are familiar (WHO Protocols and CLICK) and which were already piloted and used by many MS.
- Support MS design and decision-making by dividing methods regarding whether working with children or not, and including section on ethical issues and working with children
- Supply coding sheets, templates and analysis plans
- Use visual examples throughout
- Expand sports sponsorship and other big events if possible
- Create a network of countries that would facilitate regular experience and knowledge sharing in the area of monitoring and marketing in general

Next steps

- Draft 2 of this monitoring protocol comparison report will be assessed by the JA Expert Group and their recommendations will be factored in.
- The WP 6.4 team will consult with young people to support the ethics, recruitment and retention sections of the proposed EU-wide monitoring protocol.
- A draft stepwise protocol with associated guidance will be drawn up for review by JA partners and experts, and for piloting by JA partner countries.
- This protocol will build on existing WHO-Euro protocols.
- WP 6.4 will discuss with JA colleagues, partners from the University of Liverpool and WHO colleagues the option of linking out to their upcoming outdoor protocol.

Introduction

The Joint Action Best-ReMaP

The Best-ReMaP Joint Action (JA) runs between 2020 and 2023. Funded by the European Commission and participating organisations, it seeks to contribute to an improved quality of food supplied to citizens of Europe by adapting, replicating, and implementing effective health interventions, based on practices proven to work in the areas of:

- (1) monitoring and analysis of how the food that people consume changes at the European and national level (Work Package (WP) 5)
- (2) regulations on the marketing of food and beverages to children (WP6), and
- (3) the procurement of food by public bodies for educational institutions, social care facilities, etc. (WP7).

To achieve its goals the Best-ReMaP JA will contribute to European initiatives by:

- providing Member States assistance to produce a snapshot of food currently offered to consumers at national markets and offer an opportunity to monitor the impact of national regulations aimed at decreasing salt, sugar and fat in processed food;
- creating a Food Information Database to ensure sustainable data on food reformulation (i.e., changing and regulating the food composition that can be offered on the market) at EU and national levels, and monitoring trends in food reformulation;
- reducing the impact of harmful food marketing to children in the EU by considering extension of an existing Scandinavian regulation model across EU Member States; and
- improving the quality of menus in the kitchens of public institutions by ensuring a more professional and principled procurement procedure.

A total of 35 institutions from 24 European countries collaborate on implementing pilot projects and generating hands-on learning in nutrition with special focus on children and adolescents (see <https://bestremap.eu/>).

About Work Package 6 - Reducing the Marketing of Unhealthy Foods to Children

Best-ReMaP Work Package 6 (WP6) is focused on reducing the marketing of unhealthy foods to children and its overall goal is to share and test best practices of implemented actions to reduce unhealthy food marketing to children at the EU level and to develop an implementation and monitoring framework. The main outcome of this WP will be an EU Framework for Action that will consist of protocols for the implementation of effective policies to reduce unhealthy food marketing to children. This Framework will be transferred across EU MS through the EU High Level Group on Nutrition and Physical Activity and will provide guidance for policy implementation measures across the EU MS. It will also allow for regular updating through the EU HLG following the end of this Joint Action facilitating ongoing sustainability.

Task 6.4 of Work Package 6 is to review best practices in monitoring the marketing of unhealthy foods and non-alcoholic drinks and to develop, test, and create an **EU-wide Monitoring Protocol** to support Member States' monitoring of unhealthy food marketing to children, with a particular focus on digital marketing (7). The task partners are from 16 countries: Slovenia, Austria, Belgium, Bosnia and Herzegovina, Republic of Srpska, Bulgaria, Croatia, Cyprus, Finland, France, Greece, Ireland, Latvia, Portugal, Romania and Serbia and collaborating partners are the WHO and OECD.

A list of participating institutions can be found in Annex 1 and the tasks and structure of WP6 are listed in Annex 2.

To support this process, this report compared and evaluated four key global monitoring protocols, assessing the areas they cover, differences between them, and gaps that still need addressing. It will serve as a base for designing the EU-wide protocol. The review also consulted with the WP6.4 partners (Member States and technical experts) to understand their needs regarding the design of an EU-wide monitoring protocol. A knowledge and experience sharing workshop entitled "*Monitoring food advertising: Progress, experiences, challenges, solutions*" (JA Task 6.4.4, Milestone M6.5) took place on 9th of May 2022, in which countries shared their experiences in using marketing monitoring protocols and articulated their needs and expectations of the EU-wide monitoring protocol.

The results of this work – a desk review informed by consultation with MS about their needs, allied with recommendations – are presented in this document.

Context

The omnipresent marketing of unhealthy foods and drinks is one of the key features of children’s food environments; it is a barrier to healthy dietary intake as marketing has been demonstrated unequivocally to affect children’s food attitudes, preferences, and consumption (8,9). The consumption of ultra-processed foods, and other sub-optimal dietary practices, are all linked to ill-health including higher rates of cardiovascular disease (10,11) and Type II diabetes among others. The decline in the quality of people’s diets in recent decades is especially alarming in the case of children, as the early life food environment affects their health and relationship with food (12). This decline is the result of a dynamically changing food environment and is reversible. Focusing on the concept of personal responsibility and thus leaving the burden on the individual to resist marketing has not been successful. To tackle this important public health challenge, interventions that improve food environments and make it easy for people to eat and enjoy healthy and nutritious foods are required.

Children and young people’s ‘advertised diet’ consists predominantly of unhealthy items and brands associated with these (13). Marketing thus incorporates unhealthy foods in children’s, young people’s and families’ social norms and identities, by presenting these items as fun and pleasurable, as a way to share and show love and friendship, and as part of what it is to be a child or a teenager (14,15). Evidence shows that exposure to such marketing not only affects immediate consumption but also creates brand loyalty and normalizes an unhealthy diet (16,17).


With the increasing role that digital media play in children’s lives, new challenges arise. As extensive, personalized marketing constitutes the economic model of most digital platforms, there has been a rapid proliferation of digital marketing. It is important to note that digital media goes beyond the use of web browsers and social media and increasingly includes digitally delivered TV with personalized (‘programmatic’) advertising as well as gaming sites and other locations. Digital marketing is highly effective for multiple reasons: it is often personalized in its content to address the interests and preferences of individual users; it blurs the line between marketing and other content; and it is generally cheaper to deliver at volume than more traditional forms of marketing, leading to increasing popularity among

marketers (18) .

Regulating digital marketing is particularly challenging due to the complexity of the marketing ecosystem, i.e., the system of buying and selling advertisements online via automatic auctions, that target audiences based on their demographics and location as well as their behaviour traces, both online and offline. The complexity of this ecosystem – where it can be difficult even for advertisers to trace who these ads reach exactly – is described and illustrated in the WHO CLICK framework report (19).

Restricting food marketing that reaches children is the key priority, to change the ‘advertised diet’ to which children are exposed. Such restrictions should be based on principles flowing from a child rights based approach (16). In 2019 the Joint Research Centre (JRC), the European Commission’s science and knowledge service, published a toolkit to support the development and updating of codes of conduct (20). The toolkit aims to build EU Member States’ food marketing regulation expertise. It includes a checklist of the main aspects that a marketing code should include. One of its three main sections highlights the importance of monitoring and evaluation in the effectiveness of any code. Figure 1 shows the JRC checklist of the elements of monitoring and evaluation.

Figure 1: JRC code checklist of monitoring and evaluation of a code of conduct.



CODE CHECKLIST: Main aspects of the suggested sections in a code

C. Monitoring and evaluation

Consider the following aspects...	<input checked="" type="checkbox"/> When drafting the code...
C.1. Implementation and evaluation of the code	<input type="checkbox"/> Define an implementation strategy to ensure the uptake of the code, including relevant indicators.
	<input type="checkbox"/> Define an evaluation strategy for the code. Include details on type of evaluation, funding sources and reporting.
C.2. Enforcement of the code	<input type="checkbox"/> Define a strategy for the enforcement of the code. Disclose funding and potential sources of conflict of interest in the monitoring process.
	<input type="checkbox"/> Develop mechanism(s) to detect potential infringements to the rules.
	<input type="checkbox"/> Develop mechanism(s) to discourage new or further infringements.

To demonstrate that regulation is effective, it is essential to monitor it regularly and transparently (18,21). Any proposed regulation therefore needs to be coupled with effective monitoring. Well-designed monitoring allows Member States to measure the effectiveness of any food marketing codes of practice implemented, evaluate them, and identify infringements.

Marketing is an umbrella term for commercial activities designed to increase brand recognition, appeal and ultimately purchase of products and services (4) that covers four types of activities, so-called 4 Ps: 'product' (brand, packaging and services), 'price' (discounts and offers), 'place' (distribution, channels, market, transport, logistics) and 'promotion' (advertising, direct marketing, publicity, sales promotions).

This review addresses the "promotion" element of food marketing and has four steps. First, we provide key definitions and a brief introduction to monitoring methods available to monitor different marketing channels. Next, we describe and compare the protocols reviewed for this report, accounting for their scope and which topics and techniques were covered and how. Third, for each section we provide an interim recommendation regarding the scope of this content in a proposed EU-wide monitoring protocol. Finally, the review outlines gaps and challenges identified, returns to current key issues in the literature, and makes recommendations for EU protocol development.

Defining terms and introducing marketing and monitoring techniques

'Children', child rights, and targeting children

Defining 'children' is key, to ensure the rights of all children are being respected. The case is increasingly being made that, to protect their rights to health, privacy and freedom from exploitation under the United Nations Convention on the Rights of the Child, **all children under 18 years should be protected** from exposure to an unhealthy advertised diet.

However, many codes of practice in EU MS and elsewhere restricting unhealthy food marketing to children (whether statutory, co-regulatory or voluntary) focus on younger children. This is likely to be based on earlier studies exploring advertising literacy in children,

interpreted as the cognitive capacity to differentiate marketing from other content. The capacity to recognise marketing increases substantially between 8 and 12 years of age. It is often claimed that, as children from about 12 years old are typically aware of the intent of marketing to persuade, they can protect themselves and resist the impact of marketing on their attitudes, preferences, purchase and consumption (22). However, evidence for this is poor, as food consumption relies on many cues including situational, emotional, social norms and more. Recent research is providing more evidence that adolescents, despite their evolving cognitive capacities, remain susceptible to unhealthy food marketing (23). This may be particularly the case for digital food marketing formats for which cognitive advertising literacy does not develop until the late teens (24).

In addition to restrictions that apply to limited age ranges only, restrictions of unhealthy food marketing to children are frequently limited to marketing that is deemed to be **targeted at/directed at** children. However, children are exposed to large volumes of advertising not specifically targeted at or designed for them, and indeed the most recent research finds that children's preferences for emotion-focused advertising messages does not differ depending on whether this is child-directed or non-child-directed in its design (25). Furthermore, children model their behaviour and identities on older peers (26,27), indicating that marketing designed for older age groups can set norms and preferences for younger ones. Monitoring only the marketing that is deemed to be overtly and specifically targeted at children, or monitoring based on child *proportions* of audiences, can give an inaccurate, underestimated image of children's actual exposure and its impact. Note that the UNCRC Committee on the Rights of the Child, General Comment n25 (2021), at paragraph 41, specifies the need for the best interests of children to be a primary consideration regarding marketing that is not only 'addressed to' but also 'accessible by' children. This indicates the importance of assessing marketing in sites and channels that children use, rather than sites and marketing specifically designed for children only.

Nutrient Profiling

One of the key elements of unhealthy food monitoring is the definition of what is unhealthy. The tool most commonly used to classify foods, to identify the characteristics of the 'advertised diet', is a **Nutrient Profile Model (NPM)**. These models, designed at national or international levels, establish thresholds of nutrients (e.g., fat, saturated fat, salt, sugar)

above which foods and beverages are considered unhealthy; for example, the WHO-Euro NPM applies specified thresholds to the 17 categories of foods¹ (5). This NPM is designed and recommended for use by Member States of the WHO European Region when developing policies to restrict food marketing to children and is the default NPM used in the Best-ReMaP JA activities.

Marketing exposure and power

There are two main indicators of the impact of marketing on children: their **exposure** and its **power** (8). Measuring (or estimating) how many unhealthy food ads children see in specified channels at specified times is the main measure of **exposure**. Where it is not possible to measure direct exposure, measures of the extent of marketing in media children use can be used as a proxy measure. The **power** of marketing refers to its ability to influence the audience, i.e., the techniques and strategies used to increase advertising impact, or its capacity to influence build or reinforce brand loyalty and associations, and product/brand preferences and purchases.

Power techniques often include imagery, language, settings and messaging likely to appeal to particular age groups, including cartoon characters, celebrities, and activities popular with them. This can provide indications that marketers are overtly seeking to reach particular age groups. However, as noted above, it is important not to assume that marketing must be overtly directed at children in order to appeal to them or influence them. Note that in the context of unhealthy foods, power tactics also include the use of health messaging to create a 'health halo' or 'health washing', by highlighting one potentially healthy feature (e.g., low in calories, no added sugars), by juxtaposing the product with e.g., fruits/vegetables, or by portraying a product in the context of physical activity (28).

Ethics

Where monitoring simply involves observing existing marketing in public spaces (e.g., public

¹ Chocolate and sugar confectionery, energy bars, and sweet toppings; cakes, sweet biscuit and pastries, other sweet bakery wares, and dry mixes for making such; savoury snacks, beverages (juices, milk drinks, energy drinks, other beverages); edible ices, breakfast cereals; yoghurts, sour milk, cream and other similar foods; cheese, ready-made and convenience foods and composite dishes; butter and other fats and oils; bread, bread products and crisp breads; fresh and dried pasta, rice and grains; fresh and frozen meat, poultry, fish and similar; processed meat, poultry, fish and similar, fresh and frozen fruit, vegetables and legumes; processed fruit, vegetables and legumes; sauces, dips and dressings

transport); on publicly available, broadcast media (e.g., TV); on some digital media (e.g., brand websites and brand social media pages), it is unlikely to require ethical review. However, ethical considerations apply when monitoring in some commercial or private settings, in some settings designed for children, and when monitoring media on children's own devices (e.g., tablets, smartphones). With the advent of digital media, the ethical and legal complexities of marketing monitoring have increased greatly, partly because digital platforms claim control over all content including advertising, often discouraging research or disabling researchers' access, and partly because screen capture of content from children's devices is an intrusive process with substantial privacy implications. The key issues are addressed in WHO publications (19,29). Where children's personal data and/or devices are accessed, provisions of the GDPR apply in the EU and ethical and legal limitations on data collection, storage, analysis, and disposal apply.

Involving children in the process

There is a growing awareness in the policy environment about the importance of involving children and young people in decision making, especially when it comes to policies that involve children directly. They are increasingly recognised as experts in their own lives (30), and indeed in the case of digital lives and the social media environment, where content including marketing is individually targeted, only they can know exactly what they see. As stakeholders themselves in questions of their health, privacy, and critical digital literacy, it is also best practice to include them in the process and apply their insights.

Stepwise approach

Best practice for policy and monitoring implementation is that it should be comprehensive (31) spanning all key media and age groups up to 18 years. At the same time, the scope of monitoring activities often depends on available resources such as time, finance, researcher/monitor skills, and training. It can also be tailored to monitoring requirements in terms of marketing channels, ages of children in scope, and how targeting is defined. Balancing the available resources with best practice requires careful calibration.

Mapping the marketing landscape

Mapping the marketing ecosystem is an essential first step in any monitoring process (19,32). This involves identifying the marketing channels dominating in the country/region that are popular among children and young people, identifying relevant brands and products to assess their marketing strategies. Screening media and marketing strategies will identify what is known about marketing that reaches children, but also, in the current fluid, frequently changing marketing landscape, this allows monitors to decide what platforms to screen to obtain representative and relevant measures of children's exposure to unhealthy food marketing. The first phase of mapping aids decision-making about monitoring activities themselves should therefore also involve reviewing existing monitoring activities in the region, previous publications, and data sources available.

Monitoring of different marketing channels

TV live and streaming The bulk of evidence for children and young people's exposure to unhealthy food marketing, and its impact, continues to be in studies of broadcast TV advertising – typically, between-programme advertising and sponsorship spots. Although children's usage of digital media is increasing year on year, where data are available, these indicate that television viewing continues (including in the context of multi-screen usage) and therefore monitoring TV remains of value (33). Monitoring TV marketing usually involves video recording blocks of broadcast (usually using DVDs or hard drives of DVD recorders) and reviewing them manually.

Print (magazines, flyers) Magazines popular among children and young people and flyers can be another source of exposure to unhealthy food marketing, although their popularity is likely to be waning. Once popular publications have been identified, these are simple to monitor by identifying frequency and scale of any advertising.

Cinema Exposure to marketing of food in the cinema/movie theatre can be in pre-screen commercials, product placement in movies, on screens, signs, banners, cardboard cut-outs and in free magazines sometimes provided at these venues. Depending on the focus of monitoring, these may or may not be relevant. Permission is likely to be required to take photographs or video in cinema settings.

Outdoors Outdoor marketing, an important source of unhealthy food marketing that children

are exposed to, includes street billboards, public transport locations (buses, trains, waiting locations etc.), posters and banners (free-standing/attached, painted or digital), and store merchandise. Screening for unhealthy food marketing outdoors usually starts by identifying areas that children frequent, for example schools, within a geographically representative area taking into account locality (urban/ rural), socioeconomic status and other characteristics; defining a radius around these locations; and recording exposure by camera.

Sports and other entertainment sponsorship Sponsorship is a common source of marketing of unhealthy foods to children, either through TV broadcasts and streaming of events, or during participation at event and sporting sites, or both. This is a good example of a channel not targeted specifically at children but where large child audiences are found. Furthermore, 'health-washing' in advertising and the use of entertainment and sporting role models and celebrities mean sponsorship-based marketing has the potential not only for extensive reach but also for powerful impact on children's norms, attitudes and behaviours. Broadcasts can be recorded as for TV, although rights issues may be more complex for some streaming or paid transmission events. Recording and photography at settings where children participate will require permissions and ethical approval.

Digital media Marketing online is personalized and tailored based on the individual's characteristics (demographic, location, online and offline activities, purchase history etc.). So, individuals see personalized advertisements of products that they are more likely to be interested in; the assumption is that this is more effective in improving brand awareness and in inducing action from the user.

As children's time spent online increases, especially on social media, gaming and video sharing sites, so does the potential for digital marketing to shape their preferences, norms and behaviours. The scale of digital media marketing is increasing, and the cost of such promotion is lower than TV (34) cross-channel marketing also amplifies the effect of marketing in other media.

The digital advertising supply chain is described in two key WHO reports (2016, 2019) (19,29). Its complexity means that advertisers do not always know where and in what context their advertisement is being displayed across the web. However, within 'full-stack' digital platforms such as major social media platforms, users are tracked very closely and many advertising metrics are generated. These include not only ad views but also interaction such dwell time (length of time viewed), click-through rate (the proportion of users who click

on a specific link), engagement (likes, comments, etc.), sharing to other users, and ‘sentiment’ analysis of responses. Although these advertising metrics are available to digital platforms and to advertisers and brands, they are considered commercially sensitive and are not shared with external actors. This reflects the major power imbalances in this domain (29,35). As a result, monitoring digital media marketing is a high priority yet also presents the greatest challenge and is therefore also a particular focus of this WP 6.4 of Best ReMap.

Identification of protocols and process of review

To identify existing protocols for monitoring unhealthy food marketing to children we consulted global food marketing monitoring and research experts as well as specialists at the World Health Organization and UNICEF. This led to the identification of four protocols: one from INFORMAS, (The International Network for Food and Obesity/non-communicable diseases Research, Monitoring and Action Support) (36); the Monitoring Protocol of the Nordic Council of Ministers (37) and two protocols created by the World Health Organization (WHO) namely the WHO Protocols and Templates (32) and (focused exclusively on digital media) the WHO CLICK Framework (19).

Next, the initial findings of the PROSPERO-registered CRD42022293670 *Systematic review of best practices in implementing and evaluating marketing codes on foods and beverages to prevent childhood obesity* carried out for WP 6.5 were consulted; these did not identify any further marketing monitoring protocols. Furthermore, the WP6 mapping report (Milestone M6.3) was consulted which explored monitoring activities in Member States. This found that although many countries have some forms of *regulation* of food marketing activity, and 10 out of 16 surveyed countries reported having some form of monitoring *activities*, most did not in fact apply any specific protocol. Those that did so cited one or more of the four protocols identified above (38). Finally, Joint Action collaborators were consulted but no other protocol was identified.

Therefore, this iterative, consensus review compared four international, consensus-developed protocols created by:

- INFORMAS (<https://www.informas.org/modules/food-promotion/>)
- the NORDIC Council of Ministers (<http://norden.diva->

portal.org/smash/record.jsf?pid=diva2%3A1183357&dswid=804

- WHO Protocols and Templates (WHO PROTOCOLS for simplicity from now on; <https://www.who.int/europe/tools-and-toolkits/monitoring-of-marketing-of-unhealthy-products-to-children-and-adolescents---protocols-and-templates>)
- WHO CLICK Framework (https://www.euro.who.int/_data/assets/pdf_file/0008/396764/Online-version_Digital-Mktg_March2019.pdf).

To do so MM and MTG first carried out a comparative mapping, identifying the protocols' scope, coverage and guidance. This involved specifying which marketing channels were included, and the marketing methods, guidance and tools provided. We also assessed the presence of important aspects of monitoring such as ethics and privacy, as well as stakeholder involvement (children, young people and families) to identify current methods and practice as well as identifying any gaps in their various approaches to monitoring of unhealthy food marketing.

After the first draft of this report was completed, it was shared with participating countries in WP 6.4 and presented at a WP 6.4 workshop (Task 6.4.4, Milestone 6.5) focused on experience-sharing regarding monitoring and identifying countries' needs. The workshop was attended by 46 participants from 13 countries. The insights from this workshop were incorporated into a draft of this document which was then shared with external expert reviewers (listed on page 3). Their feedback was incorporated into the report's final version.

INFORMAS

INFORMAS is “a global network of public-interest organizations and researchers that aims to monitor, benchmark and support public and private sector's actions to create healthy food environments and reduce obesity and non-communicable diseases (NCDs) and their related inequalities” (39). The INFORMAS modules cover seven impact modules: food composition, labelling, promotion, provision, retail, prices, trade and investment. The content reviewed here is contained within the food promotion module. In addition, it includes two process modules (public and private sector policies and actions) and three outcome modules (population diet, physiological and metabolic risk factors and health outcomes).

The first INFORMAS food promotion protocol was published in 2013 in *Obesity Reviews* (40) and provides an overview of monitoring methods for several channels including TV, internet, print, in-store marketing, outdoors marketing and digital (the digital section is limited to food brand websites and websites popular with children and adolescents). It is the only one of the four protocols reviewed here that covers outdoor marketing.

INFORMAS subsequently published three very detailed protocols: TV protocol (41) (published 2014, updated 2017); Outdoor advertising around school zones (42) (published 2016, updated 2017) available to download on the INFORMAS site; the third protocol, for monitoring sports sponsorship, published in 2014, is available from INFORMAS on request. These provide background and definitions, step-by-step guidance to monitoring, guidance on sampling, data collection, data handling, analysis, and reliability tests. The TV protocol also includes a Microsoft Excel file (INFORMAS Online Annex 2) with the coding tool (43).

NORDIC Council of Ministers Protocols

The NORDIC protocol published in 2018 (37), funded by the Nordic Council of Ministers, is entitled “Monitoring food marketing to children: A joint Nordic monitoring protocol for marketing of foods and beverages high in fat, salt and sugar (HFSS) towards children and young people” and was developed by representatives from the Norwegian Directorate of Health, the Norwegian Institute of Public Health, the University of Iceland, Directorate of Health Iceland, the Finnish Consumers Union, The Danish Veterinary and Food Administration, University of Gothenburg, Lund University, The Open University (UK), National Institute of Public Health Slovenia, and the WHO Regional Office for Europe.

Its purpose was to establish joint Nordic monitoring standards and processes of unhealthy food marketing to children for Norway, Finland, Iceland, Sweden, Denmark, and the Faroe Islands, Greenland and Åland. Previous monitoring activities had taken place in these countries, but this protocol aims to facilitate cross-Nordic comparisons in monitoring of levels and trends of unhealthy food marketing in each country. As with INFORMAS, the NORDIC protocol covers diverse marketing channels such as TV, print, and digital media, plus in-store marketing. It does not provide guidance on outdoors marketing. It is the only one of the four protocols to include cinema/movie theatre marketing and indoor community venues. It covers

more digital marketing formats than INFORMAS, recommending the manual creation of individual social media ‘avatars’ that simulate a child’s profile to assess advertising served to a child-identified account, and a participant-led ad capture method whereby participating children capture images of food marketing when they see it on their devices. The NORDIC protocol also recommends monitoring social media brand profiles and pages popular with children, in-game advertisements, and video blogs.

WHO PROTOCOLS

In 2010, the World Health Organization (WHO) published its Set of Recommendations on the Marketing of Foods and Non-alcoholic Beverages to Children, endorsed by the World Health Assembly, that recommended restricting such marketing. It was reinforced by the Global Action Plan for the Prevention and Control of NCDs 2013–2020 and the WHO Commission on Ending Childhood Obesity (2016) which noted that this remained a major issue despite the unequivocal evidence that marketing was related to childhood obesity.

To provide guidance and capacity building for monitoring unhealthy food marketing in Member States and strengthen monitoring, the WHO Regional Office for Europe commissioned experts to design monitoring protocols and tools. The first iteration (2016) covered TV and websites; the version available at the time of the review of protocols (V2, 2020) (32) includes a range of digital/Internet guidance and many capacity building resources. Note that an updated V3 is due in 2022/23 for the WHO PROTOCOLS.

The WHO PROTOCOLS offer the most detailed guidance to monitoring activities of the four protocols, from recorded lectures about the theory of marketing research findings, decision making trees, and Microsoft Excel files with templates for coding content. The WHO PROTOCOLS also recommend involving children through focus groups and they discuss ethical aspects of monitoring. Digital marketing methods are described in detail and cover many potential sources of marketing to children, including screen capture.

The WHO PROTOCOLS include:

- **slidecasts** summarising key issues in psychological and marketing research regarding evaluation of food marketing exposure, power and impact on children of all ages;
- **step-by-step protocols** for conducting monitoring on TV and the internet;
- **coding templates** with variables to measure marketing exposure and power;
- **examples of completed coding** on templates (associated examples on request);
- guidance for statistical analyses;
- **templates for official reports and/or journal articles** to communicate findings; and
- **training** in monitoring study design and methods.

WHO CLICK Framework

In June 2018, a meeting of global experts who workshopped potential solutions in response to the major challenge of monitoring unhealthy marketing to children in digital media, organized by the WHO Regional Office for Europe's section on Prevention and Control of Noncommunicable Diseases. This resulted in the creation of CLICK (2019) (19), a framework that aims to support Member States in monitoring digital marketing in the complex and fluid digital ecosystem.

WHO CLICK only covers digital media, by design. The main document assessed in this review is a high-level framework that outlines and explains key principles but does not contain detailed guidance or tools. It indicates that monitoring requires Member States to engage in some or all of five key steps (see Table 1) to comprehend, assess, map, capture and share information on the digital marketing landscape, children's practices and the marketing to which they are exposed. CLICK tools were still in the piloting phase during the writing of this report; more detailed, step-by-step protocols were only available at request. Consulting with the WHO European Office for Prevention and Control of Noncommunicable Diseases (NCD Office), we were able to describe some of its elements that are not available in the primary main CLICK framework document. Note that a dedicated CLICK website is in development and is expected to be launched by 2023.

Recognising that digital marketing provides the greatest conceptual and monitoring challenge, WHO CLICK offers the most comprehensive explanation of the four Protocols reviewed of the current digital ecosystem in which marketing occurs, describing the main

actors in this ecosystem, and the challenges and opportunities that this creates. The primary CLICK document introduces the framework by describing “layers” of marketing within the ecosystem and how to understand marketing by researching and monitoring these. This means that each of these steps can be used to monitor different types of marketing and the steps can be combined or sequenced depending on resources and capacity.

Table 1: Five steps in the WHO CLICK Framework

Comprehend the digital ecosystem	Map the global, regional and national digital marketing ecosystem and children’s website/app usage. Set up focus groups to gauge children’s and parents/guardians’ experience and awareness of marketing techniques and campaigns.
Landscape of campaigns	Assess campaigns run by leading national brands by collecting information from advertising agencies and by sampling whole-country social media for relevant content to ascertain what is viewed by different age groups.
Investigate exposure	Map exposure to some paid-for digital marketing experienced by a panel of children in each age bracket (with consent) using an installed smartphone app that monitors and aggregates data on children’s interaction with advertisements in some websites and social media.
Capture on-screen	Use real-time screen capture software on a panel subgroup (installed with consent) to assess what a representative sample of children actually sees online on their devices, to understand marketing techniques more widely including influencer content, user-generated content, product placement and more.
Knowledge sharing	Create user-friendly materials from the research data and develop partnerships with young people, parents, policy-makers and civil society, who together can advocate for change, raise awareness and influence policy.

WHO CLICK recommends **first** monitoring global, national and regional marketing ecosystems, and **second** assessing the broad landscape of in-country marketing campaigns. **Third**, in the “investigate exposure” step, CLICK advocates the use of an app for monitoring paid-for exposure. It is the only protocol that recommends automated data collection to gather metadata on paid-for ads served while children use their device; though the CLICK document does not specify the proprietary software required, this information is available in

protocols and tools provided on request. **Fourth**, CLICK describes the most granular method: “capture-on screen”, which involves measuring a child’s actual exposure to all forms of marketing, by recording activity on the child’s own device. The **fifth**, final one of the CLICK stages focuses communicating findings with relevant stakeholders.

The CLICK document reviewed here (the one publicly available at the time of writing this report) does not describe the process of screening and monitoring each source of digital marketing as the other protocols do (i.e., websites, social media, video sharing, influencers, advergames, etc.); it does not provide step by step instructions and decision making for each main type of digital marketing, and does not include guidance for monitoring the ‘power’ of marketing. At the time of writing of this report this type of more detailed guidance, for steps 3 and 4 (investigate exposure and capture on screen) is provided to interested parties upon approaching the WHO. WHO provides further documentation, support in the form of meetings, ethical guidance, help with software installation and guidance on data coding and analysis. The WHO European Office for Prevention and Control of Noncommunicable Diseases (NCD Office) explained at the WP 6.4 May 2022 workshop that CLICK-specific protocols and tools will eventually be uploaded and publicly available for download on the dedicated CLICK website.

Table 2 Marketing channels covered by the four protocols. (X - not described in the protocol, ✓ - publicly available ✓* = available upon request, not currently publicly available)

	INFORMAS	NORDIC	WHO PROTOCOLS	WHO CLICK
Ethical, privacy issues addressed	X	X	✓	✓
Involves children (beyond surveys)	X	X	✓	✓
Mapping the landscape	✓	✓	✓	✓
Stepwise approach	✓	✓	✓	✓
Marketing 'power' variables included	✓	✓	✓	✓*
Channel: TV live and streaming	✓	✓	✓	X
Channel: Print (magazines, flyers)	✓	✓	X	X
Channel: Outdoors	✓	X	X	X
Channel: Community venues	X	✓	X	X
Channel: In store	✓	✓	X	X
Channel: Cinema	X	✓	X	X
Channel: Sports sponsorship	✓*	X	X	X
Channel: Digital media	✓	✓	✓	✓
<i>Screen capture</i>	✓	✓	✓	✓
<i>Automatic/AI metadata collection</i>	X	X	X	✓
<i>'Avatar'</i>	X	✓	✓	✓
<i>Social media (brand pages)</i>	X	✓	✓	✓
<i>Social media (popular with children)</i>	X	✓	✓	✓
<i>Websites (brand sites)</i>	✓	✓	✓	✓
<i>Websites (sites popular with children)</i>	✓	✓	✓	✓
<i>Video /video sharing platforms</i>	X	✓	✓	✓
<i>Influencers</i>	X	✓	✓	✓
<i>Advergames, online games</i>	X	✓	✓	✓
Coding examples provided	✓	✓	✓	✓*
Coding templates available	✓	X	✓	✓*
Analysis guidance	✓	X	✓	✓*

Comparison of protocols

This section presents comparisons of the definitions, channels, techniques, tools and recommendations offered in each of the four protocols. It first compares the four protocols' key definitions of children and of nutrient profiling, and then follows the headings in Table 2 to expand on protocol comparisons.

Definition of Children

All four protocols recommend monitoring either all those under 18 years of age or monitoring based on age spans covered in relevant regulations. The NORDIC, WHO PROTOCOLS and WHO CLICK highlight the necessity of screening different age groups separately, as their media and consumption habits and exposure to marketing can vary significantly.

Following regulations and guidelines in their regions, the INFORMAS and NORDIC Protocols suggest that in case of limited resources, a minimal approach to monitoring should focus on younger children, under 12 years of age. The NORDIC protocol argues that monitoring should “focus on the most vulnerable group aged 12 years or younger (referred to as “children”) but monitoring of marketing towards the age group 13–17 years old (referred to as “young people”) is still important” (p. 21), including assessing power techniques separately for children and young people.

The WHO PROTOCOLS and WHO CLICK in contrast emphasise the importance of taking a child-rights-based approach to monitoring of food marketing, from which many principles flow. One of these is monitoring marketing exposure across the full age range of childhood and, if resources allow, divided into narrower age brackets with groupings as follows: 5 years and under; 6–12 years; 13–15 years; and 16–17 years.

The WHO CLICK Framework suggests that monitoring activities would benefit from even further stratification by age bands (for example ages 3–5, 6–8, 9–12, 13–15, 16–18).

Recommendation

- Marketing monitoring should assess the exposure of all children under the age of 18
- Separate analyses are recommended for different age groups (12 years and under; 13-17 years), as media use, food preferences and marketing exposure may vary
- Even when applying a stepwise approach, adolescents should not be excluded from monitoring
- Monitoring should take a developmentally informed view, taking into account not only age-based variations in marketing strategies, but also considering that appeals from older role models are impactful for younger children.

Nutrient Profiling Model

The INFORMAS protocol suggests using a classification based on dietary guidelines and particularly focusing on energy-dense, nutrient-poor foods (non-core foods) and nutritious foods. For examples of how to assess whether marketed foods are permitted, INFORMAS gives examples of the WHO Regional Office for Europe Nutrient Profile Model (WHO-Euro NPM) and The Pan American Health Organization (PAHO) NPM.

The NORDIC protocol also proposes applying WHO-Euro NPM categories to allow for international comparison: where countries classify according to national or other NPMs, it is advised that it is done in addition to the WHO-Euro NPM. The NORDIC Appendix also includes potential codes for national NPMs for each Nordic country. The WHO PROTOCOLS suggest using WHO-Euro NPM. WHO CLICK recommends using the definition of unhealthy food based on regional-level nutrient profiling or WHO-Euro NPM.

Recommendation

- All Member States should use the WHO-Euro NPM when assessing marketing to facilitate cross-EU comparability
- Additionally, Member States should apply any criteria specified in country-specific codes and/or regulations to measure code /regulation compliance.

Ethical and privacy issues

Ethical and privacy issues in monitoring food marketing do not feature in the INFORMAS protocol. The NORDIC protocol briefly mentions the necessity to follow the terms and conditions of each social media platform when designing the monitoring activities, especially when it comes to using an avatar that simulates children's user profile.

The WHO PROTOCOLS give more attention to this topic referring to the importance of "ethics and legality when carrying out internet research, particularly with children's data".

When designing monitoring activities, it recommends considering the following:

- Scientific research ethics require study participants to consent to use of their data.
- Parent and child consent requirements, and the ages at which these apply, vary between countries.
- Consent should be an ongoing process rather than a single agreement. Participants must consent to all stages of the process and have the right to withdraw at any point of the project.
- In the case of social media, it remains unclear whether data (particularly children's data) should be considered private, even where accounts are publicly viewable.
- A careful, case-by-case evaluation of the balance of benefits and harms is required, and it should always be borne in mind that the benefit to children and society of such studies can be high.

Note that researchers must be very careful about the possibility of individuals being identified from digital data. The European Union (EU) General Data Protection Regulation (GDPR) requires protection of personal information, but also recognizes the benefits of research. Legal considerations apply when accessing data on privately owned internet platforms or engaging in activities that are not permitted by their terms and conditions (setting up accounts in false names, for example). Some such studies have been carried out internationally with insurance indemnity provided to university researchers, but university/institute risk assessments vary greatly. In more recent years, as the reputation of some platforms has dropped, the risk calculation has changed.

As parts of the WHO CLICK framework feature research on the most ethically sensitive channel, digital marketing involving children's own devices, it discusses ethical challenges faced when monitoring digital marketing to children in more detail. These can also be an

obstacle in recruitment process. The protocol highlights that:

Review by an ethics board is required; a data governance board should be set up and a set of policies and procedures should be developed. These should establish how the research team would respond if risky behaviours were detected (such as evidence of sexual grooming or interaction with suicidal ideation websites), where threatening behaviour was detected or if leaks of children's personal data were to occur.

As WHO CLICK notes, the screen capture method (see below) is probably the most ethically sensitive as it involves extracting potentially personal and private content along with marketing. When dealing with children's and parental consent this protocol recommends that researchers must clearly inform participants about "how the information gathered will be used and how data will be stored and destroyed".

Upon request, WHO offers more guidance and meetings to support the complex ethical processes involved in steps 3 and 4, the "Investigate exposure" and "Capture on screen" steps that rely on recruiting children and installing software on their devices.

Recommendation

- Ethical considerations and children's privacy should be at the core of all monitoring activities.
- Ethical practice should be clearly described for all monitoring activities, especially where recruitment of children and data collection from their devices is involved.
- Consent given by children must be valid and not subject to undue influence (including financial factors (6)).
- This is particularly the case for digital marketing, which has complex privacy and data protection implications, particularly when employing screen capture methods, where the only way to obtain reliable data on children's exposure involves access to their digital devices.
- Activities that involve screening social media should be aware of platforms' terms and conditions

Involving children in the process

The INFORMAS and NORDIC protocols recommend that children should participate by being surveyed to determine the selection of media channels for monitoring. The WHO

PROTOCOLS do the same and also add the possibility of running focus groups with children and young people to better understand the media and marketing ecosystems – to explore children and young people’s device and platform use, and their views of marketing. Similarity, WHO CLICK describes setting up focus groups to engage children’s and parents/guardians’ and explore their experience and awareness of marketing techniques and campaigns.

WHO CLICK contextualises this by discussing the rights-based importance of involving young people: as “realization of children’s rights includes their right to have their voices heard” (p.25). It encourages running focus groups to discuss their understanding of their exposure to digital marketing. Since recruiting children to participate in monitoring that takes place on their digital devices can be challenging, understanding their concerns and interests can also be achieved through focus group discussions. WHO CLICK highlights that the evidence provided by focus groups could provide an insight into the best form of communication of each step of monitoring activities to children and their families and encourage participation.

All protocols encompass, even if indirectly, some elements of child rights in their approach. A child rights-based approach in monitoring of unhealthy foods marketing starts with inclusion of children of all age, up until 18 years old. This allows us to understand their food marketing environment and acting accordingly to protect them from harm.

Recommendation

- Design of monitoring activities should always be done with a child rights-based approach
- Children are experts in their lives and are stakeholders in the monitoring of unhealthy food marketing.
- Consulting children and young people and facilitating their meaningful engagement can improve the quality, accuracy, and efficiency of the monitoring process, as well as realizing their rights.
- If data on children’s media use and food preferences are not available, surveys, interviews and focus groups should be run to obtain these.
- Findings should be disseminated to children to involve and inform them about actions

aimed at improving their food environment. Where possible, it is best practice to involve children in this process as well.

Mapping the marketing landscape

All four protocols recommend mapping although they vary in the scope recommended, from simple screening for dominant media, to detailed mapping of important stakeholders, industry campaigns and even running focus groups with children and parents to assess awareness of marketing activities, media children use most, devices they use, brands they see, and what they eat. These help to design monitoring activities tailored to the specific, local needs and focus often limited resources where they are most needed. All recommend reporting the methods and findings of mapping in any monitoring report.

INFORMAS gives guidance on mapping prevalent media, those most frequently accessed by children, and when (local/national channels as well as international broadcast where relevant); screening for existing data on children's exposure to unhealthy food marketing; and verifying countries' expertise in collecting and analysing marketing data. INFORMAS describes several mapping methods. For TV, channels should be selected "based on their popularity with, and reach to, the target group", and to identify popular TV channels and/or programmes, and those that target ages and ethnicities, commercial audience data can be purchased. The popularity of channels and programmes can also be studied using child surveys. To map online activity, INFORMAS recommends buying commercial data on media reach for the internet and net ratings data to assess usage of websites such as food company or third-party websites. Industry reports, regional promotion publications, and discussions with experts in the field are recommended as another means of obtaining this information. Although websites owned by food companies might not have extensive reach, some may have advergames embedded in them: branded games designed to engage players with immersive advertising. Data on marketing expenditure can also be used; however, INFORMAS also note that expenditure data may be misleading, especially for digital media, which can achieve greater reach using inexpensive methods and powerful designs. This assumption has been supported by a successful challenge to the UK government's spend-based estimate of the scale of unhealthy digital marketing to children (34).

Similarly, the NORDIC protocol describes the process of defining the dominant media screening for the most recent data and trends in media use among children using a survey or

media data on their media use. They also advise describing these trends in any final monitoring report.

The WHO PROTOCOLS also specify screening for dominant media in their TV protocols and in the Internet protocols in the sections that cover the “Preparation stage”. This Internet protocol covers in detail how to map children’s media and device use, their internet practices (websites, social media platforms, media-sharing sites, channels and apps they use most; popular media, entertainment and sporting stars, “influencers”; as well as brands and product visibility in terms of advertising exposure in other channels or product sales).

These protocols highlight the need to monitor different age groups of children, for example for TV to include at least one channel each popular with younger children (<12 years) and adolescents (13–17 years), as younger and older children can vary in their media use, consumption patterns, and the content within which marketing is found. As there are several potential sources of information about TV channel popularity, they suggest that researchers should gather relevant data from the most credible sources available including data on the target group’s peak viewing times.

The WHO PROTOCOLS also note that a useful source of information about marketing campaigns is marketers’ and brands’ own reports, regularly published in the trade press, which give insights into methods used to target children and data about reach and sales boosts. They recommend consulting marketing academics and professionals or WHO-Euro NCD office and the training unit advisory team about best sources for such information. The protocol also indicates reports and publicity of local media and entertainment awards and events and advertisers’ blogs and magazines as other potential sources of channels, brands and influencers popular with children of various ages.

WHO CLICK describes mapping the marketing ecosystem in the “Comprehend the digital ecosystem” step (Table 1), arguing for the need to map the digital marketing ecosystem and children’s website/app usage and assess campaigns run by brands. CLICK includes a useful section (3.1, page 24 of CLICK) with a table that presents the proposed template of relevant information to be obtained in the mapping process as well as its potential sources. It includes two main sections with examples of stakeholders that can be included in the mapping activities and examples of data on ecosystem elements to be included with examples of information these could provide.

Recommendation

- Mapping activities should be the first step in the monitoring process. This facilitates decision making and improves the accuracy and generalisability of the results.
- Mapping activities should not be restricted to media designed for, or specifically directed at, children. All media channels, programmes and platforms *used by* children should be assessed.
- Mapping activities should incorporate a range of sources and stakeholders to generate effective representation of the marketing landscape.
- Spend is not a useful proxy for digital advertising reach.

Stepwise approach

As noted above, monitoring should be as comprehensive as possible, covering all age groups and marketing channels. However, all monitoring activities need to be tailored to meet available resources, capacity and local monitoring requirements. Many modifications can be applied, for example by adjusting the number of media channels, time points analysed, elements of ads coded, scope of persuasive and power techniques coded, etc.

The INFORMAS protocol describes three tiers of monitoring activities: ‘minimal’, ‘expanded’ and ‘optimal’ approaches.

- ‘Minimal’: suggests the measurement of children’s exposure to promotions for one dominant medium for a limited number of time points, it focuses on younger children (less than 12 years) and limits the assessment of the power of promotions to a few persuasive techniques.
- ‘Expanded’: assesses younger and older children, screens several dominant media over more time points, but the power of promotions is measured including a limited number of persuasive techniques.
- ‘Optimal’: Measurement of exposure and power of promotions in all dominant media with data collected for a range of time points. Includes a more thorough evaluation of the content of promotions and persuasive techniques. In addition, exposure to, and appeal of, promotions to a range of age and ethnic groups should be determined.

The NORDIC protocol notes that depending on available resources it can be used either in part or in whole. It also notes that a primary focus on younger children can be supplemented by monitoring of adolescents. The optimal approach spans all media; a minimal approach is restricted to one media channel.

The WHO PROTOCOLS provide a detailed description of a stepwise approach in the TV protocol, with two approaches described, minimal and expanded. These include a decision-making tree to guide the user in choosing which of these approaches will be the most appropriate for their needs and resources. Coding of the variables collected with these two approaches is included in the coding file with a separate spreadsheet for minimal and expanded approach. The WHO PROTOCOLS Internet protocol does not include overt description of a stepwise approach but rather notes that monitoring activities must be tailored to monitors' capacity, in terms of budgets and access to information about children's/brands' activities in the country being monitored.

WHO CLICK does not specifically mention a stepwise approach in the publicly available document.

Recommendation

- Comprehensive monitoring is optimal
- A stepwise approach is a useful feature that helps protocol users design activities based on available resources and objectives.
- Structured guidance on the stepwise approach could allow comparability
- Steps can be based on adjusting the range of monitored media, channels, methods or indicators of marketing content.
- As there is little evidence that older children's advertising literacy protects them from the manipulative effects of marketing, the stepwise approach should not limit monitoring to younger children only.

Monitoring 'power' variables

The INFORMAS protocol recommends assessing TV advertising for the presence of promotional characters (e.g., cartoon figures and celebrities), premium offers (Game and app

downloads, Contests, Pay 2 take 3 or other, 20% extra or other, Limited edition, Social charity, Gift or collectable, Price discount, Loyalty programs).

The NORDIC protocol cites marketing techniques that increase its power to influence children separately for younger and older children (under 12 years/13-17 years). These techniques include the use of use of child/teen-directed language and/or children's voices, use of music images and colours likely to appeal to them, children/teens appearing in the commercial in a way and extent that is likely to be appealing to children, use of people, personalities, celebrities, their associates or other persons or individuals who are considered to be their hero/idol, use of cartoon brand owned characters and cartoon licensed characters that appeal to children, free gifts, toys or collectible items and competitions, vouchers or games that appeal to these age groups.

The WHO PROTOCOLS include variables for reporting the power of marketing, in a dedicated section of every monitoring template for each channel provided, proposing that coders identify the primary and secondary persuasive appeals used (and compare those used in ads for foods 'permitted' vs 'not permitted' to be marketed to children by restrictions in place, or according to WHO-Euro NPM). In addition, they recommend identifying whether or not ads appeal to children and/or to teens and specifying other primary age groups to whom the ad appeals. Coding for power variables also spans marketing techniques such as use of celebrity endorsers, health claims, etc.

WHO CLICK briefly mentions that one of the elements measured in monitoring activities should be the power of marketing but does not provide guidance on this.

Health Messages The INFORMAS TV monitoring protocol proposes coding health messages, giving a very detailed list of types of health claims: Health related ingredients claims, nutrient content claims (e.g. low fat), Nutrient comparative claims (e.g. reduced fat), General health claims (e.g. healthy diet), Nutrient & other function claim (e.g. calcium good for bone), Reduction of disease risk claims (e.g. HF tick), Other claims (e.g. organic). The NORDIC and WHO PROTOCOLS propose coding for the presence or absence of health and/or nutrition claims in marketing. The publicly available introductory document of the WHO CLICK, does not address power variables and does not specifically mention coding for health claims, however the protocols and tools available on request and soon to be available

to download provide coding guidance to assess marketing strategies and power of the identified marketing content.

Recommendation

- Power is an important indicator of marketing messaging and effectiveness and should be monitored across all channels.
- The presence of elements aimed at children and young people (characters, popular celebrities, language etc.) should be recorded. However, the absence of such elements cannot necessarily be taken to infer that the marketing does not impact on certain age groups.
- The context in which marketing is presented can affect its power to impact children and should also be recorded.

Monitoring of different channels

TV live and streaming

INFORMAS defines TV advertisements as “spot advertisements which are broadcast in between and during programs” and does not cover product placement in shows and sponsorship. INFORMAS covered TV monitoring methods in a 2013 Obesity Reviews paper (40). The 2017 TV protocol on the INFORMAS project website goes into further detail. This extended TV protocol covers definitions, sampling, methods of data collection and handling, extensive coding examples for minimal and optimal approaches, examples of data analysis and reliability checks. The first step is to identify popular channels with the target group (ages <12, <16 or <18 years) obtaining audience ratings of the channels for these age ranges or using survey data. These may be national, local or cable channels; terrestrial or satellite; free-to-air and pay-for-view channels that screen commercial advertisements. Those channels are defined “by the proportion of the audience within the specified age group that the channel attracts during weekday and weekend peak viewing times for that age group.” and ‘peak viewing’ hours are defined using data on the actual viewing patterns of the age group.

The NORDIC protocol advises screening programmes that specifically target children as well

as those that attract children (i.e., have a large children's audience) identified using audience or rating data. Streaming TV is popular among children and young people and the NORDIC protocol recommends including it in the monitoring activities. Data collection should be stratified by age and gender, into groups of girls/boys 12 years or younger and 13 to 17 years. In an annex it provides a list of variables and coding including coding specific to TV marketing.

The WHO PROTOCOLS includes a package of tools that facilitate monitoring of unhealthy food marketing that children see on TV. This includes the main protocol document, a decision-making tree to guide the choice of scope of monitoring activities, as well as a simple flow chart with order of activities, a coding template file (Microsoft Excel file with suggested variables to be coded within minimal and extended approaches; a coding sheet with categories for these variables). As with INFORMAS, this protocol focuses on commercials only (excluding sponsorship and content appearing during programmes). It describes monitoring the most popular commercial TV channels watched by children under 18 years of age and to include at least one channel popular with children under 12 years and at least one channel popular with 13–17-year-olds by assessing channels' popularity and peak viewing times. The WHO PROTOCOLS point towards potential sources of data to assess the popularity and audience such as freely available audience measurement data; broadcast regulator report data on viewing patterns, purchase of commercial audience data, running a survey of young people searching for websites or newspaper articles listing popular channels with the age group of interest.

WHO CLICK addresses digital marketing only and therefore does not cover TV.

Recommendation

- TV is still a popular medium used by children and monitoring of marketing is still recommended.
- The primary TV channels *popular with* children should be monitored – not only children's channels. Monitoring should cover children's peak viewing times for these channels.
- Monitoring should also cover peak general audience viewing, even if children form smaller proportions of the audience, as such programming may reach large absolute

numbers of children.

- Monitoring should not be limited to commercial breaks; for example, extensive marketing during large sports events through sponsorship should be monitored (see sports sponsorship).

Print (magazines, flyers)

Two of the protocols, INFORMAS and NORDIC, include print marketing. INFORMAS suggests identifying popular magazines for the target group based on readership data or surveys and to include at least 6 months of publication for each magazine title. The NORDIC protocol provides a short guideline for reviewing most popular magazines for the age and gender groups described above and the annex materials have coding examples for the indicators that it screens for. WHO PROTOCOLS and WHO CLICK do not have print marketing in scope. Existing protocols do not provide guidance on monitoring flyers and leaflets (e.g., those delivered to households to advertise local and delivery services).

Recommendation

- The popularity of marketing through flyers (e.g., fast food/take-away) should be assessed to decide on its inclusion. With increasing home food delivery, these may be increasingly relevant.
- The popularity of magazines is decreasing especially among young people so, unless local data indicate their popularity, this should not be a priority channel if resources are limited

Outdoors and community venues

INFORMAS is the only of the four protocols to include outdoor marketing monitoring. The 2013 Obesity Reviews article (40) outlines the method; the extended protocol document published in 2017 gives much more detailed guidance. It aims to estimate the rate of healthy and unhealthy food advertising within a selected area around a child-serving institution. The measure of exposure is the number of relevant items per 100m². The protocol only screens for branded content. Store or restaurant signage is also included, as are brand name or logos without the depiction of the product. The data collection should take place within a

short period of time (e.g., two months).

It describes alternative screening for a minimal and optimal approach, with the optimal approach including indicators of both extent and power of marketing, and, across a range of time points, a more detailed evaluation of its content and power. It should also aim to assess the extent and power of advertising to a variety of age and ethnic groups. In this approach all the indicators should be used to measure trends over time. This protocol also includes helpful data collection tools and data analysis examples.

The NORDIC protocol includes screening for marketing inside local community venues such as schools and sports arenas in urban and rural sites. Photos of advertisements should serve as material for coding. Types of marketing included in this are sponsor boards, vending machines, material that are distributed and sold at the schools/arenas, competitions/activities, canteens.

Recommendation

- Outdoor marketing in areas frequented by children is an important source of exposure.
- Advertising on public transport should be included on routes that children frequently take for school and leisure.
- New automated methods may be less resource heavy.

Cinema

The NORDIC Protocol is the only one to describe monitoring unhealthy food marketing in cinemas and provides coding examples in the annex. They suggest including movies without an age limit and those for 15 years and below, monitoring commercials played before the movie, and/or marketing in cinema shops/entrance areas. To obtain data on commercials prior to the movies, copies of such commercials could be requested from the marketing distribution companies. This protocol excludes product placement in the movie itself.

Recommendation

- Cinema may form one element of monitoring. However, as cinema attendance is less frequent than e.g., social media use for most children, it is likely to be less relevant for

overall exposure than other media channels.

Sports and other event sponsorship

INFORMAS is the only protocol that covers this type of marketing, at clubs and sporting organisations. It is covered briefly in the 2013 Obesity Reviews article and later described extensively in the 2014 sponsorship protocol. It notes that although the preferred measurement of impact would be levels of exposure and the nature of sponsorship, it might be more achievable to measure the *extent* and nature of sponsorship by unhealthy brands for the most popular sports among children.

As with the other two detailed protocols published by INFORMAS (TV and outdoors), the sponsorship protocol provides guidance for important definitions, scope, methods of data collection and handling, data analysis, and dissemination. It provides list of variables/indicators to gather data on and coding examples. It does not provide the coding sheets or templates.

Large sport events often involve a multi-channel marketing of unhealthy foods and other commodities that is currently not being monitored. That involves marketing through internet (social media, websites), food packaging, TV commercials, heavy presence during the event on field (player's sports' kits, pitch-borders, product placement, mascot's kit, media backdrops during interviews) and more. The marketing strategies often involve competitions. This kind of marketing is very potent and appeals to younger audience. There is currently no protocol to monitor this form of multi-channel marketing.

There is currently no protocol of which we are aware that would cover marketing around other big events, either streamed or on site.

Recommendation

- Extensive sports sponsorship is found on TV broadcasts, streaming, and at sporting sites. Many have very large child audiences.
- The impact of sports sponsorship as a form of marketing is likely to be heightened

by the presence of sports star role models and by the 'health-washing' impact of sporting activity.

- Sports and other sponsorship should be included as a core component in marketing protocols, whether local codes or regulations restrict this practice or not.
- A protocol to monitor a multi-channel marketing around large sports events should be developed
- Other big events such as festivals and concerts that frequently involve marketing of unhealthy foods or drinks and have large child audiences should be included in the protocol.

Digital media

Potential vs actual exposure

One useful classification of methods of monitoring of unhealthy food marketing in digital spaces that supports planning these activities, involves distinguishing between methods that require recruitment of children to measure their *actual* exposure to marketing while they use their own device, versus methods that do not involve children and their devices, that measure *potential* exposure, or the *extent* of marketing activities.

Methods that measure children's *actual* exposure involve installing software on their devices after obtaining their consent. With specialised software, data can be gathered either by recording their activity (in form of a video or screen shots) or automatically aggregating the data on marketing they are exposed to.

One currently available tool allows automated aggregation to capture *paid-for* marketing. It returns results in form of a table with metadata gathered. It includes a link to the recorded material and allows researchers to code additional elements of marketing such as its power. However paid-for marketing remains a small proportion of marketing in digital media (34).

Monitoring all types of marketing, including influencer marketing, earned and owned marketing in social media, and user-generated content, requires using a 'capture on screen' method. The recorded material is then manually coded by researchers (although automated

methods are currently in development) to define type of ad, product, brand, power of the recorded content. These types of monitoring usually require allowing an extended period of time to secure ethical clearance issues related to working with minors and using their devices; screen their online activity; and to allow for the recruitment and retention of participants.

Methods that do not involve children and their devices measure *potential* exposure (the *extent* of marketing) and these consist of identifying digital spaces popular among children (places children frequently visit, social media they use) and brands popular in this age group that have social media presences. Researchers then visit these spaces (e.g., an Instagram brand page) and record marketing content encountered there and later code it. These methods depend in large part on manual coding, but they have the benefit of using publicly available data and thus not requiring ethical clearance or recruitment and retention of participating children. Despite measuring only potential exposure these methods can return very powerful results, especially monitoring of influencers popular among children and methods they use to reach their audience with marketing. (44,45)

Types of digital media covered by protocols

The INFORMAS protocol's internet marketing guide only addresses websites popular with children including food and non-food websites. The NORDIC protocol has a wider scope spanning social media, advergames, websites and video-blogs/blogs. It suggests assessing all types of marketing exposure, not only paid-for but also earned marketing. The WHO PROTOCOLS further expand the scope of digital marketing monitoring, describing methods to assess marketers' and brands' reports of marketing campaigns as well as the marketing of unhealthy foods on children's websites, social media, YouTube brand channels, YouTube social media influencers, brand/product websites and brand social media pages. They also briefly describe methods for recording children's screen use to allow monitoring of earned/user-generated marketing.

Digital marketing is the sole focus of the WHO CLICK Framework; the report describes the digital marketing ecosystem; the urgency for action to regulate it to protect children; current legislation; and the chain of ad supply online. It also discusses the problematic issues of age verification, ethics of digital marketing monitoring and other challenges that researchers face.

It mentions methods of monitoring of all channels and types of digital marketing content, paid-for, earned, social media, influencers, video viewing and sharing platforms, advergames. It recommends assessing the landscape of campaigns. It proposes several methods to assess the exposure of children to unhealthy food marketing online.

Two CLICK steps, “Investigate exposure” and “Capture on-screen” aim to measure aspects of the actual level of marketing children are exposed to while using their personal devices. This is done by recruiting a panel of children in each age bracket and obtaining their informed and valid consent (and that of parents/guardians where needed). Both steps involve installing software (software used in these steps is provided by the WHO and is specified in the protocols) on children’s devices (with fully informed, valid consent) after which participants are asked to use their device as they usually would. Researchers are then able to measure the marketing participants are exposed to in all digital spaces including social media and websites.

Step 3 of CLICK, “Investigate exposure”, involves installing software (WHO provides access to the RealityMine app, that is an app provided by an external developer and paid-for; other similar apps could be used, subject to ethical and data protection constraints). This collects metadata on paid-for marketing served to the device. It does not record the content viewed on the device and cannot record other forms of marketing exposure; its output is a database. It automatically recognises food marketing content, creates an entry in the database, and records the brand, product and other specifications of the marketing content. If the location of the item is recorded (this can be inconsistent), researchers can view the content itself via a link, and code the power elements of the ad. Examples of studies that used this tool, with further methodological detail, can be found in the report from 2020 by SIFO Consumption Research Norway and Oslo Metropolitan University investigating Norwegian’s children’s exposure to digital food and drink marketing (46) and an MSc dissertation of Margarida Bica from NOVA University Lisbon, Portugal published in 2020 (47).

In contrast, “Capture on-screen” installs software that records all the child’s activity when activated; either taking a screenshot (for example via the KidAd app, provided by the WHO) or as a video while a user browses on their own device. It is later extracted, viewed and manually coded by researchers. To protect children’s privacy the WHO KidAd app allows researchers to pre-specify the apps that will be monitored so only record activity on these. It

also has a feature that erases any screen shots that accidentally captured private chats and conversations so these are not made available to researchers. Screen capture is more time consuming but has the potential to identify a fuller range of content including user generated content and other less obvious forms of marketing, for example, a food brand that is building visibility by sharing non-food content. At present (2022), automated image extraction methods are in development that have the potential to identify brand logos in screen-recorded content and thus save on time required for manual extraction – though manual analysis is still required. Within the guidance to digital media monitoring CLICK also describes the ethics and principles involved in studies that involve using applications to record children’s actual marketing exposure, again with informed and valid consent.

Social media

The INFORMAS protocol does not give guidance on monitoring social media, influencers marketing or adver gaming.

The NORDIC protocol, as a first option, advises to try to purchase age-and location-specific analytics from brands and platforms, should availability and resources permit. The second method proposed involves manually creating ‘avatar’ user profiles that simulate behaviour of a child at the age of interest online to monitor exposure. They highlight the importance of designing all monitoring activities in line with the terms and conditions of each platform as these might for example restrict access to their data to researchers or not allow creation of fake accounts. The NORDIC protocol also mentions a form of participant-led screen capture by recruiting children and asking participants to take screenshots of ads they see when navigating through social media on their device. It also proposes monitoring the content of social media brand pages, based on their popularity among children or on products belonging to one of the categories ‘not permitted’ for marketing to children as listed in the WHO-Euro NPM (i.e., chocolate and sugar confectionery, energy bars, sweet toppings and desserts, cakes, sweet biscuits and pastries other sweet bakery wares, breakfast cereals, certain beverages, savoury snacks, ice cream and fast food).

The WHO PROTOCOLS has a detailed document guiding users through the process of analysing social media marketing (32). The first method described is a content analysis of

the frequency and power of marketing on social media brand pages for popular brands (defined using an ad buying audience size estimation available in the Facebook – now Meta-system). The steps in this process are summarised as:

- Identify products/brands to assess in social media as in step 2 of the Preparation stage.
- Estimate proportionate reach or select using other methods.
- Identify your country's brand page and capture posts on this page.
- Carry out content analysis.

This approach can be used for multiple social media and video sharing platforms.

The next approach is to study actual exposure by recording children's screen use.

- Recruit a group of children whose parents give consent for their viewing to be recorded on their own/family devices.
- All ethical procedures for child-focused research must be followed
- Children will be requested to engage in a short period of activity on the internet, as they usually would on their own/family device (desktop, laptop, tablet, smartphone).
- They may wear eye-tracking glasses that can record what takes place on the screen; alternatively, the screen may be placed on a stand and a video recorder set up to record the screen in real time.
- Alternatively, in-phone screen recording apps are available; however, there are ethical concerns about these, as they may result in metadata, as well as screen activity data, being shared.
- Subsequent analysis depends on the content viewed.

WHO PROTOCOLS give useful examples of software that can be used to capture children's screen activity in form of a video.

For screen recording on a PC, this article from TechRadar (<https://www.techradar.com/uk/how-to/how-to-record-your-pcs-screen>) provides several options, including this free software (<https://www.apowersoft.com/free-online-screen-recorder>), which is recommended for those without other tools at their disposal. For Mac users, QuickTime is a standard application that allows recording of screen activity with sound.

The WHO CLICK framework recommends starting monitoring of digital marketing by developing comprehension of the ecosystem, popular apps and websites, and assessing children's and parents' awareness about the topic, as well as of national campaigns and relevant content popular with children (for example by screening social media using a data

mining approach).

To monitor children's exposure to marketing in social media, the CLICK methods are described above.

Websites

INFORMAS suggests identifying popular websites based on net ratings data or surveys and include food and non-food websites and visiting each of these sites once. It would include brand websites if those proved to be popular. As the method of data collection, it mentions coding at the time of visit on the site (though does not mention on whose device, researcher's, or child's) or using specialised software to capture the page (screen-capture) to be coded later (again, it does not specify if it is child's device).

The NORDIC protocol covers all types of websites in their protocol (brand and product sites, sites designed for children and those that children visit frequently). For non-food sites, it suggests monitoring 10 most visited websites (excluding search engines) and 10 most popular (video-) blogs among their specified age and gender groups. They do, however, highlight a strong limitation of such method. The marketing content displayed on these sites is highly personalised based on tracked online activities of the user, therefore a researcher visiting the same sites will not see the same advertisement as children see. Monitoring food industry sites should only be done if they are popular amongst and visited by children. Since cross-border marketing is challenging in the case of online environment, especially when it comes to legislation, it is important to make the distinction between the national and international webpages, but both types should be included. As an alternative NORDIC discusses using WHO-Euro NPM to choose three product specific webpages from one of its food categories and screenshots of these pages should be saved for analysis by two independent researchers.

The WHO PROTOCOLS provide a file with detailed guidance into monitoring brand or product websites (Internet website brand-or-product Protocol v2 2020). This file also includes helpful screenshots of the examples. A Microsoft Excel coding file provides a template for content coding. To monitor brand webpages, it describes identifying at least 30 popular products/brands, locating their pages (it suggests that using a device used by a child after

obtaining their consent might help identification), recording all search terms, and recording the content by taking screenshots. This protocol also covers exposure on entertainment sites but notes that this can only be measured with the analytics method (i.e., by buying advertising exposure data from analytics companies) or with the recording option.

The WHO CLICK framework starts by suggesting mapping of the ecosystem by recognising websites and brands popular among children, and manually scanning those of major brands to analyse existing campaigns and methods used to appeal to children. Again, the two methods described above, “Investigate the exposure” step and “Capture on-screen” will also capture use of websites by children.

Video and video sharing platforms

Influencer marketing

As INFORMAS includes only a basic approach to digital media (websites only), it does not provide any guidance on influencer marketing.

The NORDIC protocol does not explicitly mention influencer marketing but through screening of social media and video blogs, using manual avatar or participant-led screenshot methods, they may identify influencer marketing. In the video-blog section of their protocol they list “sponsored blog content (declared and non-declared)” as one of the variables to be assessed.

WHO PROTOCOLS covers this topic in detail in the file “3.7 YouTube influencer protocol v2 2020”. It notes that the reach of the videos of influencers popular with children gives an indication of reach with children and content should be analysed to identify the presence of food cues and the power of such marketing. These are not always disclosed or directly endorsed by the influencer.

As for social media in general, WHO CLICK’s steps, including assessing the landscape of campaigns, may potentially flag some of the main influencers (data mining, outlined above could identify the main influencers in the field, although it might not be possible to verify if the

person promoting an item or a brand has been paid to do so by the brand). However, the most likely step to identify influencer marketing will be capture-on-screen where real-time screen capture software allows to capture all types of marketing children see.

Video sharing platform monitoring (e.g., YouTube)

INFORMAS does not cover any other video sharing platform monitoring. The NORDIC protocol suggests screening the 10 most popular videoblogs popular by the age and gender groups defined by the protocol; however, note, as in the case of websites, some forms of advertising on videos is personalised so viewing it from an adult account might not return credible results.

In the WHO PROTOCOLS, the method to monitor YouTube brand pages is detailed in the “Internet YouTube brand channel Protocol_V2_2020” which follows a similar process to social media brand pages content analysis. It suggests choosing 10-30 brands/products popular among children, searching for their official, preferably national channels on video sharing platforms, and saving the URL addresses. The WHO PROTOCOLS provide detailed step by step guidance into analysing the reach and power of such marketing, including Microsoft Excel templates and a set of screenshots that help understanding the steps of monitoring and coding the content of YouTube videos.

In the WHO CLICK framework this type of marketing would be captured in the “Investigate exposure” step using an app recording metadata associated with paid-for ads. While a participating child watched a video using this app, the following indicators can be recorded:

- the length of time for which the child watches video
- the child’s location
- the YouTube channel
- advertisements that autoplay before, during and after the video (time/date/duration stamped)
- banner advertisements, any interaction with the advertisements (pause, skip, etc.).

YouTube marketing would also be captured in the WHO CLICK "Capture on-screen" step.

Advergames and online games

Any games on websites are covered by the NORDIC, WHO PROTOCOLS and the WHO

CLICK protocols. NORDIC is the only protocol that includes a specific guidance on screening for marketing in online games that are not advergames (they are not designed specifically around a product or a brand, but marketing of foods can be placed in them). Since such advertisements would be personalised based on users' activity online, the NORDIC protocol recommends such monitoring should be performed on computers that are “clean”. The most popular games among the age and gender groups should be selected (girls/boys 12 years or younger, 13 to 17 years). The five most popular online games and five most popular console games should be screened.

Recommendation

- Digital marketing is the most complex to monitor and requires careful assessment of researcher- and study capacity (financial, skills and time); mapping of the ecosystem; and assessment of the most impactful features within a stepwise approach.
- There is a body of evidence regarding the extent and impact of marketing on websites and advergames, but these are now less relevant with a greater focus on social media and video sharing sites.
- Social media and video sharing platforms are among the most relevant digital channels to monitor. Monitoring these can involve straightforward content analysis of brand or influencer activities on these platforms. More complex studies involving automated data collection or screen capture are also possible, but these require larger budgets, technical expertise, and the capacity and expertise to gain ethical approval and recruit and work with children and young people.
- Influencer marketing and brand activity on online gaming platforms should also be considered.
- Digital marketing monitoring, even where elements are automated (e.g., metadata capture, or image analysis), requires a considerable investment of time in data management.
- Ethical and privacy implications are considerable for many aspects of digital marketing monitoring and substantial time allocations should be made for these processes.

Coding the content

The extent of detail of the coding process given differs between these protocols. Provision of coding templates or guidance facilitates researchers' work and allows for better comparability between channels, countries, teams, and over time (e.g., pre-and post-regulation).

The INFORMAS 2013 protocol paper gives a list of indicators to code for each marketing channel but does not give examples of codes. The more recent TV protocol and Outdoor marketing protocol (2017) provide codes for variables and the syntax for data preparation and analysis. It also gives a helpful estimation of the time required for coding, indicating it might take up to one hour of coding for each hour of television recorded.

Each section of the NORDIC protocol includes a set of indicators to be recorded for each channel and provides detailed coding guidance in the Appendix 2 Coding scheme – example.

The WHO PROTOCOLS go a step further and include Microsoft Excel files with blank coding templates (including all variables) as well as coding examples for TV and internet data. The TV coding file provides these for minimal and extended version of the protocol.

WHO CLICK does not specify any form of coding of the recorded variables in the publicly available document yet. Protocols with coding examples and guidelines are provided by WHO on request and WHO plans to upload them to the CLICK website for download.

Recommendation

- As social media marketing monitoring is complex and onerous, provision should be made for stepwise features in templates and protocols to allow MS to adapt for capacity as needed.
- Pre-populated templates and protocols will ensure that studies across Member States are comparable.
- Templates and protocols should be versioned so they can be updated as the media and marketing ecosystem changes.

Summary and conclusion

The INFORMAS protocol was first published in a peer-reviewed journal (40) with an outline of methods covering various sources of marketing. However, as it was published a decade ago, its digital marketing section only spans monitoring of websites of popular brands, sites popular among children, and brand websites if those are popular in the target group and purchase of commercial data. More recent documents by INFORMAS are detailed and extensive, but only outdoors, TV and sports sponsorship protocols are available to date. INFORMAS is the only group that covers outdoor marketing, and it does so in considerable detail. **The NORDIC protocol**, as with INFORMAS, covers many marketing channels. It is the only one that covers cinema/movie theatre. It also covers a wide range of digital marketing techniques.

The WHO PROTOCOLS have the most detailed guidance for monitoring activities, with introductory and theoretical information, decision-making trees, excel files with templates for coding content, and describing involving children through focus groups and discussing ethical aspects of monitoring. Digital marketing methods are described in detail and cover many potential sources of marketing to children, including screen capture. However, its current format (within folders on a website) does not allow for an easy overview. **The WHO CLICK Framework** only covers digital media. It contains the most comprehensive explanation of the current digital ecosystem in which marketing occurs, describes main actors in this ecosystem, and the challenges and opportunities that this creates. It is the only one that includes an automated method of extracting metadata using novel software to gather data on paid-for ads served to some settings while children use their device. At this point, CLICK contains little hands-on practical information on monitoring activities that are publicly available, compared to the other three protocols, especially WHO PROTOCOLS. In feedback to this report, WHO stated that future materials will include guidance on monitoring marketing power, which is not described in the currently available document. It does not specifically indicate any software that could be used to capture on-screen data or extract metadata of paid-for ads, but these are made available on request when approaching WHO to perform a monitoring project. These soon to be made available CLICK tools and protocols will be important as researchers less experienced in marketing monitoring might require more detailed, step by step data-gathering and coding guidance that other protocols already

provide.

Marketing of unhealthy foods to children is increasingly recognised as a **children's rights** issue and it is important that food marketing restrictions and monitoring are designed with a child rights approach in mind (18). Marketing of unhealthy foods violates various rights including to **health and food**. A comprehensive list of rights affected by these types of marketing can be found in the UNICEF guidance document "A child rights-based approach to food Marketing: a guide for policy makers" (3) Due to the specific personalised and data driven character of digital marketing, in addition to the rights mentioned above, food marketing now also affects **rights to privacy and to freedom from exploitation** (16).

Any monitoring activities, especially those that involve capturing children's activity on their devices, require close attention to **ethical, legal, privacy and data protection compliance** as well as optimal methods of recruiting and engaging with children and young people. Designing monitoring of marketing in digital media, specifically methods that require investigators to access children's electronic devices (details of these methods are described below) requires **balancing the protection of children's rights** that are regained when the issue of unhealthy food marketing is tackled against the right of a child to privacy (asking them to show us what they see in social media). Ethical clearance for such studies needs to clearly state the benefits of such activities and measures implemented to minimise the violation of children's privacy. An important element of working with children in monitoring studies is assuring their consent is truly informed and they have the right to withdraw. Involving children in the monitoring activities beyond the role of a participant, engaging them as experts in being children (young people) and consulting them on some elements of the study design and dissemination methods is equally a reflection of the child's rights approach. A child's rights approach should be further explored as a basis for design of the new EU-wide protocol to monitor unhealthy foods marketing to children.

Protocols should provide more guidance focus on the ethical and privacy issues of monitoring, especially of digital media. Further topics such as methods of participant recruitment to undertake screen-capture or metadata extraction would be a useful and practical addition to protocols, as cooperation of children and their families in monitoring of actual exposure to digital marketing is crucial. For this purpose, a good understanding of children's and adolescents' relationships with technology, social media and their digital identities should be explored. This might not only help participation but also ensure that the children give informed and valid consent to participation.

Automation offers considerable promise for speeding up the monitoring process and resolve the problem of limited time resources. However, such technologies are still in their infancy and even where they do exist, they currently require substantial research or investment in data management, coding, and analysis. As they are being developed, such technologies should be tested for their accuracy, privacy, and security before being deployed in wider population. **A dynamic and rapidly changing marketing ecosystem**, especially digital, means that an ideal monitoring protocol is easily adaptable to changes, and is updated when ecosystem changes are identified, when new monitoring techniques become available or when experience shows room for improvements and adjustments.

Who are the protocol end users? Establishing this is crucial, to specify the level of detail required for guidance and theory provided. Experts in public health might need different features clarified than those from marketing, psychology, politics etc. It might be especially relevant in the complex and evolving world of digital marketing.

Concluding Recommendations

In sum, four international protocols developed by subject experts in the last decade are available for monitoring the marketing of foods and beverages to children. These all have different strengths and some gaps. As a final recommendation, the authors of this report – after consultation with MS, and experts in the field, conclude that an EU-wide Protocol should do the following:

1. Devise an EU-wide marketing monitoring framework that links to existing protocols hosted by WHO-Euro
2. Assess routes to providing protocols for event-based sponsorship marketing and outdoor marketing
3. Provide further contextual information and guidance for MS, particularly relating to digital marketing
4. Provide further supporting materials for MS new to food marketing monitoring as a practice especially preparatory stage and resource planning
5. Provide support materials for MS on working with and involving children having UNESCO child's rights as the basis
6. Explore opportunities for knowledge sharing between MS on marketing monitoring
7. Identify the optimal site for hosting the EU-wide protocols so facilitate visibility, access and knowledge-sharing

The Open University, September 2022

Annex 1 – Partners participating in the WP6.4 task

Country	Organisation Acronym	Organisation Full Name
Slovenia	NIJZ	National Institute of Public Health of the Republic of Slovenia
Austria	BMASGK	Federal Ministry Republic of Austria Labour, Social Affairs, Health and Consumer protection
	AGES	Austrian Agency for Health and Food Safety GmbH
Belgium	SCIENSANO	SCIENSANO federal research centre
Bosnia and Herzegovina	PHI- FBH	Institute of Public Health of Federation of Bosnia and Herzegovina
	MCA	Ministry of Civil Affairs of Bosnia and Herzegovina
Republic of Srpska	PHI-RS	Public Health Institute of Republic of Srpska
Bulgaria	NCPHA	National Center of Public Health and Analyses
Croatia	CIPH	Croatian Institute of Public Health
Cyprus	MoH CY	Ministry of Health
Finland	THL	National Institute of Health and Welfare
France	MoH FR	French Ministry of Solidarity and Health
	SPF	Santé Publique France (French National Public Health Agency)
Greece	ICH	Institute of Child Health
Ireland	DoH	Department of Health
	CHDR	The Centre for Health & Diet Research
Latvia	CDPC	Centre for Disease Prevention and Control
Portugal	DGS	Directorate-General of Health (Direção-Geral da Saúde)
Romania	NIPH	National Institute of Public Health
Serbia	IPHS	Institute of Public Health of Serbia "Dr Milan Jovanović Batut"
Collaborating partners:		
	WHO Europe -NCD Office	The WHO European Office for the Prevention and Control of Noncommunicable Diseases
	OECD	Organisation for Economic Co-operation and Development

Annex 2 – WP6 tasks

	Objective	Participating partners:	Task Leader:
Task 6.1	Establishment of the EU Expert Group and national intersectoral working groups.	ICH, SCIENSANO, BMASGK, CDPC, MCA, PHI-FBH, PHI-RS, NIPH, NIJZ, CHDR, MoH CY, CIPH, MoSA, NIHD, THL, LR SAM Collaborating partners: WHO, OECD, JRC	DoH, Ireland and DGS, Portugal
Task 6.2	Mapping of existing regulations and legislation in EU MS	ICH, BMASGK, SPF, MOH-FR, IPHS, NIPH, CHDR, MoH CY, CIPH, THL, LR SAM Collaborating partners: JRC, WHO (WHO European Marketing Network on reducing marketing pressure to children)	DoH and DGS,
Task 6.3	Implementation of the transposition of the new Audio-visual Media Services Directive (AVMSD)	ICH, CDPC, SPF, MOH-FR, NIPH, NIJZ, CHDR, MoH CY, CIPH, MoSA, NIHD, THL, LR SAM Collaborating partner: WHO	DoH, DGS and NIJZ
Task 6.4	Development of an EU-wide harmonised and comprehensive monitoring protocol for reducing unhealthy food marketing to children.	ICH, SCIENSANO, BMASGK, SPF, IPHS, CDPC, MCA, PHI-FBH, PHI-RS, MOH-FR, NIPH, NIJZ, CHDR, MoH CY, NCPHA, CIPH, THL, DGS Collaborating partners: WHO, OECD	The Open University
Task 6.5	Guidance for regulatory and voluntary codes of practice.	ICH, SCIENSANO, BMASGK, SPF, IPHS, MCA, PHI-FBH, PHI-RS, MOH-FR, CHDR, FCNAUP, MoH CY, MoSA, NIHD, THL, LR SAM Collaborating partner: JRC	DoH, DGS
Task 6.6	Adaptation of the monitoring tools to address health inequalities	ICH, SCIENSANO, IPHS, NIPH, FCNAUP, NIJZ, MoH CY, CIPH, THL Collaborating partner: WHO	DGS
Task 6.7	EU harmonised Framework for Action on reducing unhealthy food marketing to children. (Consolidated protocols for the implementation of effective policies)		

Annex 3 - Consultations with WP6.4 partners to identify MS support needs, and expert review

Alongside the desk review detailed above, between January 2022 and September 2022 we performed a series of consultations and engaged in expert review of this document. To identify JA partners' needs regarding the EU-wide harmonized monitoring protocol, the consultation consisted of:

- **M6.5 A workshop** to implement the EU protocol to monitor food marketing to children
- **A poll** during the workshop to assess partners experience and expectations
- **Consultation of the first draft** of this report document with the suggested recommendations. Nine partners reviewed the document, proposing amendments and making suggestions regarding the form and content of the EU-wide monitoring protocol.
- **Emails and online meetings** with partners
- **Two surveys** (pre-workshop; post-survey).
- **1st WP6 EU Expert Group meeting**

In the following sections we summarise the findings of these consultations.

M6.5: Workshop to implement the EU protocol to monitor food marketing to children

This six-hour knowledge- and experience-sharing workshop was held online on the ZOOM platform on May 9th, 2022. It was attended by 46 participants from 13 MS (most WP6 partner countries) and opened by Ireland's Minister for Public Health, Frank Feighan TD.

The workshop's objectives were:

- To present current monitoring methods, ethical aspects of monitoring, discussing resources needed to perform monitoring activities
- To review global monitoring protocols with a focus on digital marketing.
- To facilitate knowledge and experience exchange, discussing challenges, successes, and outcomes of monitoring in countries that have used or piloted existing global protocols.

A detailed account of the workshop can be found in Annex 4. Below, we summarise the key requests from MS that arose from the workshop, feedback on Draft 1 of this report, and other components of this consultation processes and how we propose the EU-wide monitoring protocol will respond.

Summary of MS requests and WP 6.4 responses

MS request:	Our proposal:
To reduce confusion and reduce need for any retraining, use the tools and technologies already in place and piloted by many countries (WHO protocols and CLICK framework).	After discussion with the WP6 team, Best-ReMaP coordinators and the WHO it was agreed the JA should create a joint EU-WHO protocol that will build on existing resources
To support MS learning process on monitoring, create a knowledge exchange platform for countries to collaborate on monitoring activities. Add collective learnings/knowledge exchange with examples, case descriptions with timelines, struggles, solutions etc especially in ethics/data privacy in the protocol/report.	We acknowledge the need for an experience and knowledge sharing platforms for MS and although the creation of such a facility it outside the scope of WP 6.4, we will discuss this issue with the JA coordinators, experts in the field and partners. We have shared experiences we gathered from countries in our workshop and uploaded them to the intranet available for partners in form of minutes from the workshop and recordings. We will include links to published and other available monitoring activities in the EU-wide monitoring protocol.
To support MS in building a monitoring team with relevant skills and expertise based on resources available, please include guidance on what is required and design monitoring guidance for complete beginners, using brief descriptions for introductions and support materials in a handbook. Provide clear guideline for digital landscape mapping for those without digital literacy	We will include a preparatory stage and resource planning support in the EU-wide monitoring protocol, designing a protocol that will be suitable for users with various levels of expertise in digital media and monitoring of unhealthy food marketing to children
To support MS monitoring decision making and design fit to resources, present monitoring options divided between those that require research with children and those that do not; with pros and cons outlined clearly.	We will use this as an element in decision-making tree in the EU-wide monitoring protocol draft.
Design a clear stepwise approach for monitoring activities so MS can understand how to adapt to available resources.	We will include a clear stepwise approach in the EU-wide monitoring protocol draft.

As MS that are already piloting methods for digital monitoring have struggled with ethical clearance, participant recruitment and retention, include guidance on working with children and young people. Include ethical aspects of working with children especially the use of financial incentives.	We will add a section on ethical issues and working with children in the EU-wide monitoring protocol draft. We have recruited a team of young people with experience of working on issues to do with food marketing and regulation to assist us in developing these sections.
To support MS report writing and knowledge exchange, templates would be a useful tool in the protocol to know what output should be generated by monitoring of each media/channel.	We will provide, or link to, detailed coding sheets, templates, and analysis plans in the EU-wide monitoring protocol draft, with visual examples of various types of ads for each channel.
To support MS learning, use visualisations in the document (screenshots and examples of marketing content with examples of coding)	We will include visual aids in the EU-wide monitoring protocol.
To support MS in the mapping of children's media habits and brand popularity create a standardised survey to be applied across EU	We will draft a mapping survey that can be translated to other languages and used to gather standardised data on children's media habits and popular brands
Add other big events to sports sponsorship (e.g., concerts, theatrical events).	We added the recommendation to the report draft and will discuss the possibility of adding other large events and multi-channel marketing monitoring to the EU-wide monitoring protocol draft, depending on resources and timelines.

1st WP6 EU Expert Group meeting

On August 31st, 2022, 1st Best-ReMaP WP6 EU Expert Group on actions to reduce unhealthy food marketing to children and adolescents meeting organised by the Work Package 6 took place online. The participating experts were:

- Alice Pisana, European Commission DG SANTE
- Amandine Garde, University of Liverpool, Expert Group member
- Eva Grammatikaki, JRC, Expert Group member
- Jane Landon, Health inequalities expert, Expert Group member
- Jo Jewell, UNICEF, Expert Group member
- Kathrin Hetz, WHO Europe, on behalf of Kremlin Wickramasinghe, Expert Group member
- Michele Cecchini, OECD, Expert Group member

- Mike Rayner, Oxford University, Expert Group member
- Mojca Gabrijelčič Blenkuš, NIJZ Slovenia, Best-ReMaP Scientific Coordinator, WP7 Lead
- Natalia Zampieri, European Commission DG SANTE
- Samuele Tonello, EuroHealthNet, Best-ReMaP WP4 Lead

Ahead of the meeting, experts were sent a draft of this review; during the meeting, updates on the 6.4 task that included the work on this document were presented and discussed.

Experts provided their feedback on the review and recommendations for the EU-wide coordinated and comprehensive monitoring protocol. These were incorporated into the final draft of the review and will feed into the design of the protocol. Key points of this meeting regarding task 6.4 were:

- The protocol created within the 6.4 task will need to be hosted in a platform where it is easily accessible and can be updated when necessary. Kathrin Hetz noted that the WHO digital marketing platform is being updated and will host all WHO protocols that will become part of the EU-WHO monitoring protocol and this protocol can link out to these materials.
- Eva Grammatikaki noted that JRC could host the monitoring tools. JRC has a repository where the protocols can have a permanent link to use anywhere and then to cross-link in JRC FABLE.
- Creation of a knowledge and experience exchange platform for MS was mentioned as an element of sustainability of JA actions by Marco Silano (WP4); Mojca Gabrijelčič Blenkuš agreed that MS need such a platform to discuss policies and specific policy tools or options for implementation as well as monitoring.
- Experts concluded that it is important to highlight that the protocol needs to take a comprehensive approach and include all key exposure channels in the country and all forms of marketing.
- Importance of including all children up to 18 years of age in monitoring activities was stressed in accordance with the child rights perspective.

Details can be found in the report with minutes from the meeting available on the Best-ReMaP intranet.

Annex 4. Summary of M6.5: A workshop towards implementing an EU protocol to monitor food marketing to children

This knowledge and experience sharing workshop “*Monitoring food advertising: Progress, experiences, challenges, solutions*” was held online on the ZOOM platform on May 9th, 2022 with 46 participants from 13 partner countries. Its objectives were to:

- Present current monitoring methods, ethical aspects of monitoring, discussing resources needed to perform monitoring activities
- Review global monitoring protocols with a focus on digital marketing.
- Exchange knowledge and experience, discussing challenges, successes, and outcomes of monitoring in countries that have used or piloted existing global protocols.

Ahead of this meeting all WP6.4 partners were sent a short survey to explore their expectations and a first draft of this report to familiarise themselves with the document, current monitoring methods available and to provide their insight and suggestions as to the final form of this report and the EU-wide monitoring protocol.

The meeting was officially opened by the Minister for State at the Department of Health in Ireland, Frank Feighan TD.

- A quick poll assessed participants’ experiences with monitoring unhealthy food marketing and working with children; confidence in being able to run monitoring studies; and some basic elements of their advertising literacy. It also assessed the expectations from the workshop.
- Poll results (confirmed by our one-to-one communication with partners) showed that partners have varying level of expertise in the monitoring of food and drinks marketing and working with children; most reported little experience.
- The level of confidence in running monitoring varies too, but generally there is a lower level of confidence in monitoring digital media and most in monitoring TV marketing
- Results of this poll showed that only eight (27.6%) participants out of 29 who responded assessed their experience in monitoring marketing at 6 or higher on a scale of 1-10 (where 1 is no experience and 10 is lots of experience.)

- Similarly, as expected from the first question, only 7 (25%) of the respondents felt at least somewhat confident that their confidence about being able to plan and run monitoring activities were (6 or more on a scale 1-10 where 1= Not at all confident and 10 = completely confident)
- As for the different channels, participants felt they would be the most confident monitoring TV, less confident monitoring outdoors marketing and least confident monitoring digital media. Of 20 who completed this section only 4 (20%) felt not at all confident they could run a TV monitoring activity, and 6 felt very or completely confident (30%). For outdoors marketing (n=19), 6 participants (31.6%) felt not at all confident and only 3 (15.8%) felt very or completely confident. For digital media 8 respondents (40%) felt not at all confident that they could monitor this type of media and only one person felt very confident they could do it.
- Participants were most familiar with the WHO PROTOCOLS followed by the CLICK framework and the least familiar with the INFORMAS protocols. Five (29%) used these protocols in their work including three who had used the WHO Protocols, two the CLICK Framework and one the INFORMAS.
- We asked participants which of a set of images taken from social media they would classify as unhealthy food advertising; their responses showed there was no general consensus and the boundaries between marketing and content are often blurred in social media. This highlights the need for inter-rater reliability checks when coding screened content.
- While most participants felt they could explain terms such as 'paid-for ad', 'user-generated content' and 'influencer marketing', most did not think they could explain what an advergame or native advertisement was.
- When asked to assess their team's experience in any form of research with children, there was a big disparity in the responses but most assessed it as 6 or higher on a scale of 1-10 from no experience to lots of experience.
- When asked about expectations as to the workshop the most common response was to learn about monitoring of digital marketing but also general experience and knowledge sharing between countries and gaining general basic knowledge and skills in the field of monitoring activities.
- The poll was followed by a presentation by the WP6 member Dr Magdalena Muc from The Open University that outlined the initial results of the protocol comparison report

presented in this document. This presentation set the background for the further discussion about the partner's needs and expectations of the EU-wide monitoring protocol.

- Professor Emma Boyland (University of Liverpool) summarised current methods of monitoring of food marketing in digital media.
- After the break an experience sharing session included presentations by four WP6.4 partners: Slovenian National Institute for Public Health, Direcao Geral de Saude, Portugal, Finnish Institute for Health and Welfare, and WHO-Euro representative Kathrin Hetz. These partners presented their experience with monitoring studies in their countries: results, challenges, and how they overcame them. The main challenges that countries reported were ethical clearance being a lengthy and complicated process (even with the support of the WHO); difficulties in recruitment and retention of child participants; and gaps in the data aggregated by the automated software in the "Investigate Exposure" stage of the WHO CLICK framework (currently being addresses by WHO).
- Kathrin Hetz (WHO) provided more insights into the CLICK framework methods and planned next steps. These were added to the second draft of this report.
- All participants were invited to an open discussion on their needs and expectations of an EU-wide monitoring protocol. The outcomes will feed into the Best-ReMaP EU-wide protocol in preparation.
- After the workshop, participants were sent an evaluation survey which indicated that the workshop has met its objectives, as participants felt more confident they are able to run monitoring activities. Open questions in this survey also further explored partners' support needs. As the survey response rate was low, further discussions were carried out with individual countries to establish their support needs.
- Individual meetings online and face to face (during the STOP-Co-CREATE-Best ReMaP joint symposium meeting in Brussels in June 2022) were organised to explore partners' needs and plans for monitoring studies in their countries. Partners were invited by the WP6.4 team to reach out to arrange meetings, exchange emails etc., and 12 partner countries have done so. Their suggestions and ideas further contributed to this report and will feed into the design of the EU-wide monitoring protocol.

References

1. Advertising | Knowledge for policy [Internet]. [cited 2022 Oct 11]. Available from: https://knowledge4policy.ec.europa.eu/glossary-item/advertising_en
2. Submitter's guide- Best Practice Portal [Internet] [Internet]. [cited 2022 Oct 11]. Available from: <https://webgate.ec.europa.eu/dyna/bp-portal/SubmittersGuide.pdf>
3. Garde A, Byrne S, Gokani N, Murphy B. A Child Rights-Based Approach to Food Marketing A Guide for Policy Makers [Internet]. UNICEF; 2018 [cited 2022 Oct 11]. Available from: https://www.unicef.org/csr/files/A_Child_Rights-Based_Approach_to_Food_Marketing_Report.pdf
4. World Health Organization. A framework for implementing the set of recommendations on the marketing of foods and non-alcoholic beverages to children [Internet]. World Health Organization; 2012 [cited 2022 Aug 19]. 61 p. Available from: <https://apps.who.int/iris/handle/10665/80148>
5. WHO Regional Office for Europe nutrient profile model [Internet]. WHO Regional Office for Europe; 2015 [cited 2022 Aug 17]. Available from: <https://apps.who.int/iris/handle/10665/152779>
6. Resnik DB. Bioethical Issues in Providing Financial Incentives to Research Participants. *Medicolegal Bioeth.* 2015 Jun 24;5:35–41.
7. WP6: Food marketing – Best-ReMaP [Internet]. [cited 2022 Aug 17]. Available from: <https://bestremap.eu/marketing/>
8. Food marketing exposure and power and their associations with food-related attitudes, beliefs and behaviours: a narrative review [Internet]. [cited 2022 Aug 17]. Available from: <https://www.who.int/publications-detail-redirect/9789240041783>
9. Report of the commission on ending childhood obesity [Internet]. [cited 2022 Aug 17]. Available from: <https://www.who.int/publications/i/item/9789241510066>
10. Afshin A, Sur PJ, Fay KA, Cornaby L, Ferrara G, Salama JS, et al. Health effects of dietary risks in 195 countries, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. *The Lancet.* 2019 May 11;393(10184):1958–72.
11. Srour B, Fezeu LK, Kesse-Guyot E, Allès B, Méjean C, Andrianasolo RM, et al. Ultra-processed food intake and risk of cardiovascular disease: prospective cohort study (NutriNet-Santé). *BMJ.* 2019 May 29;365:l1451.
12. Vandevijvere S, Jaacks LM, Monteiro CA, Moubarac JC, Girling-Butcher M, Lee AC, et al. Global trends in ultraprocessed food and drink product sales and their

- association with adult body mass index trajectories. *Obes Rev Off J Int Assoc Study Obes.* 2019 Nov;20 Suppl 2:10–9.
13. Kelly B, Vandevijvere S, Ng S, Adams J, Allemandi L, Bahena-Espina L, et al. Global benchmarking of children’s exposure to television advertising of unhealthy foods and beverages across 22 countries. *Obes Rev Off J Int Assoc Study Obes.* 2019 Nov;20 Suppl 2:116–28.
 14. Boyd, Danah. *It’s Complicated - The Social Lives of Networked Teens.* Yale Univ Press [Internet]. 2014 [cited 2022 Oct 28]; Available from: <https://www.degruyter.com/document/doi/10.12987/9780300166439/html>
 15. Tatlow-Golden M. *Food, eating and identities.* In: *Exploring Childhood and Youth.* Routledge; 2020.
 16. Kelly B, Boyland E, King L, Bauman A, Chapman K, Hughes C. Children’s Exposure to Television Food Advertising Contributes to Strong Brand Attachments. *Int J Environ Res Public Health.* 2019 Jul;16(13):2358.
 17. Swinburn BA, Sacks G, Hall KD, McPherson K, Finegood DT, Moodie ML, et al. The global obesity pandemic: shaped by global drivers and local environments. *Lancet Lond Engl.* 2011 Aug 27;378(9793):804–14.
 18. Tatlow-Golden M, Garde A. Digital food marketing to children: Exploitation, surveillance and rights violations. *Glob Food Secur [Internet].* 2020 Dec [cited 2022 Aug 17];27. Available from: <http://oro.open.ac.uk/71537/>
 19. World Health Organization. Regional Office for Europe. *Monitoring and restricting digital marketing of unhealthy products to children and adolescents: report based on the expert meeting on monitoring of digital marketing of unhealthy products to children and adolescents: Moscow, Russian Federation, June 2018 [Internet].* World Health Organization. Regional Office for Europe; 2019 [cited 2022 Aug 17]. Report No.: WHO/EURO:2019-3592-43351-60815. Available from: <https://apps.who.int/iris/handle/10665/346585>
 20. Grammatikaki E, Sarasa RA, Maragkoudakis PA, Wollgast J, Louro CS. *Marketing of food, non-alcoholic, and alcoholic beverages. A toolkit to support the development and update of codes of conduct.* [Internet]. JRC Publications Repository. 2019 [cited 2022 Oct 11]. Available from: <https://publications.jrc.ec.europa.eu/repository/handle/JRC118874>
 21. Tatlow-Golden M, Jewell J, Zhiteneva O, Wickramasinghe K, Breda J, Boyland E. Rising to the challenge: Introducing protocols to monitor food marketing to children from the World Health Organization Regional Office for Europe. *Obes Rev Off J Int Assoc Study Obes.* 2021 Nov;22 Suppl 6:e13212.
 22. Nairn A, Fine C. Who’s messing with my mind? *Int J Advert.* 2008 Jan

-
- 1;27(3):447–70.
23. Harris JL, Yokum S, Fleming-Milici F. Hooked on Junk: Emerging Evidence on How Food Marketing Affects Adolescents' Diets and Long-Term Health. *Curr Addict Rep*. 2021 Mar 1;8(1):19–27.
24. Zarouali B, Verdoodt V, Walrave M, Poels K, Ponnet K, Lievens E. Adolescents' advertising literacy and privacy protection strategies in the context of targeted advertising on social networking sites: implications for regulation. *Young Consum*. 2020;
25. Soda advertising effects on children's beverage preferences as mediated by attitudes toward the ad and product: comparing impacts of child- vs. Non-child-directed targeting strategies and use of emotional appeals.
26. Lowe CF, Horne PJ. 'Food Dudes': Increasing Children's Fruit and Vegetable Consumption. *Cases Public Health Commun Mark*. 2009;3:161–85.
27. Marcano-Olivier M, Sallaway-Costello J, McWilliams L, Horne PJ, Viktor S, Erjavec M. Changes in the nutritional content of children's lunches after the Food Dudes healthy eating programme. *J Nutr Sci*. 2021;10:e40.
28. Whalen R, Harrold J, Child S, Halford J, Boyland E. The Health Halo Trend in UK Television Food Advertising Viewed by Children: The Rise of Implicit and Explicit Health Messaging in the Promotion of Unhealthy Foods. *Int J Environ Res Public Health*. 2018 Mar 20;15(3):E560.
29. World Health Organization. Regional Office for Europe. Tackling food marketing to children in a digital world: trans-disciplinary perspectives: children's rights, evidence of impact, methodological challenges, regulatory options and policy implications for the WHO European Region [Internet]. World Health Organization. Regional Office for Europe; 2016 [cited 2022 Aug 17]. 41 p. Available from: <https://apps.who.int/iris/handle/10665/344003>
30. Mason J, Danby S. Children as experts in their lives: Child inclusive research [Editorial Introduction]. *Child Indic Res*. 2011;4(2):185–9.
31. World Health Organization. Regional Office for Europe. Evaluating implementation of the WHO Set of Recommendations on the marketing of foods and non-alcoholic beverages to children: progress, challenges and guidance for next steps in the WHO European Region [Internet]. World Health Organization. Regional Office for Europe; 2018 [cited 2022 Sep 28]. Report No.: WHO/EURO:2018-3299-43058-60256. Available from: <https://apps.who.int/iris/handle/10665/345153>
32. WHO tool for behavioural insights on COVID-19 [Internet]. [cited 2022 Aug 17]. Available from: <https://www.who.int/europe/tools-and-toolkits/monitoring-of->

marketing-of-unhealthy-products-to-children-and-adolescents---protocols-and-templates

33. Children and parents: media use and attitudes report 2022 [Internet]. Ofcom. 2022 [cited 2022 Aug 17]. Available from: <https://www.ofcom.org.uk/research-and-data/media-literacy-research/childrens/children-and-parents-media-use-and-attitudes-report-2022>
34. Tatlow-Golden M, Parker D. The Devil Is in the Detail: Challenging the UK Government's 2019 Impact Assessment of the Extent of Online Marketing of Unhealthy Foods to Children. *Int J Environ Res Public Health*. 2020 Jan;17(19):7231.
35. Tatlow-Golden M, Tracey L, Dolphin L. Who's Feeding the Kids Online? Digital food marketing to children in Ireland: Advertisers' tactics, children's exposure and parents' awareness [Internet]. Dublin, Ireland: Irish Heart Foundation; 2016 [cited 2022 Aug 17]. Available from: https://irishheart.ie/wp-content/uploads/2016/12/web__whos_feeding_the_kids_online_report_2016.compressed.pdf
36. Dr Wima Waterlander. INFORMAS Protocols Terms and Conditions. 2017;411166 Bytes.
37. Helleve A, Sandberg H, Berg C, Prell H, Ólafsdóttir S, Gísladóttir E, et al. Monitoring food marketing to children: A joint Nordic monitoring protocol for marketing of foods and beverages high in fat, salt and sugar (HFSS) towards children and young people [Internet]. Copenhagen, Denmark: Nordisk Ministerråd; 2018 [cited 2022 Aug 17]. 53 p. Available from: https://www.nordic-ilibrary.org/social-issues-migration-health/monitoring-food-marketing-to-children_tn2018-504
38. WP6. M6.3 Regulation and legislation mapping report [Internet]. Best-ReMaP; 2022 [cited 2022 Aug 17]. Available from: <https://bestremap.eu/results/>
39. About INFORMAS | INFORMAS [Internet]. [cited 2022 Sep 28]. Available from: <https://www.informas.org/about-informas/>
40. Kelly B, King L, Baur L, Rayner M, Lobstein T, Monteiro C, et al. Monitoring food and non-alcoholic beverage promotions to children. *Obes Rev Off J Int Assoc Study Obes*. 2013 Oct;14 Suppl 1:59–69.
41. Kelly B. INFORMAS Protocol: Food Promotion Module: Food Marketing - Television Protocol. 2017 Dec 5 [cited 2022 Aug 17]; Available from: https://figshare.com/articles/journal_contribution/INFORMAS_Protocol_Food_Promotion_Module_Food_Marketing_-_Television_Protocol/5664706/1
42. Mackay S, Molloy J, Vandevijvere S. INFORMAS protocol: Outdoor advertising

-
- (school zones). 2017 Dec 14 [cited 2022 Aug 17]; Available from: https://figshare.com/articles/journal_contribution/INFORMAS_protocol_Outdoor_advertising_school_zones_/5701102/2
43. INFORMAS Protocol: Food Promotion Module - TV Advertising: Annex 2 (TV Coding Tool) [Internet]. The University of Auckland; [cited 2022 Aug 17]. Available from: <https://figshare.com/s/cdc26be275ec95f0fffc>
44. Alruwaily A, Mangold C, Greene T, Arshonsky J, Cassidy O, Pomeranz JL, et al. Child Social Media Influencers and Unhealthy Food Product Placement. *Pediatrics*. 2020 Nov 1;146(5):e20194057.
45. Coates AE, Hardman CA, Halford JCG, Christiansen P, Boyland EJ. Food and Beverage Cues Featured in YouTube Videos of Social Media Influencers Popular With Children: An Exploratory Study. *Front Psychol* [Internet]. 2019 [cited 2022 Sep 28];10. Available from: <https://www.frontiersin.org/articles/10.3389/fpsyg.2019.02142>
46. Steinnes KK, Haugrønning V. Mapping the landscape of digital food marketing: Investigating exposure of digital food and drink advertisements to Norwegian children and adolescents [Internet]. Consumption Research Norway (SIFO), OsloMet; 2020 [cited 2022 Aug 19]. Available from: <https://oda.oslomet.no/oda-xmlui/handle/20.500.12199/6510>
47. Bica MS. Evaluating children exposure to digital marketing of unhealthy foods in Portugal with World Health Organization Framework CLICK. 2020 [cited 2022 Aug 19]; Available from: <https://run.unl.pt/handle/10362/127354>