

Updating the Canadian clinical practice guideline for managing pediatric obesity: a protocol

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Abstract

Background: Since the first national guideline for managing obesity in adults and children in Canada was published in 2007, new evidence has emerged and guideline standards have evolved. Our purpose is to describe the protocol used to update the Canadian clinical practice guideline for managing pediatric obesity.

Methods: This guideline will update the pediatric components of the 2007 Canadian clinical practice guideline for the management of obesity. In partnership with Obesity Canada, we began preliminary work in 2019; activities are scheduled for completion in 2022. The guideline will follow standards developed by the National Academy of Medicine and the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) working group. Guideline development will be informed by 5 complementary literature reviews: a scoping review that focuses on clinical assessment in pediatric obesity management and 4 systematic reviews to synthesize evidence regarding families' values and preferences as well as the safety and effectiveness of interventions (psychological and behavioural; pharmacotherapeutic; and surgical). We will use standard systematic review methodology, including summarizing and assessing the certainty of evidence and determining the strength of recommendations. Competing interests will be managed proactively according to recommendations from the Guidelines International Network. Diverse stakeholders, including families and clinicians, will be engaged throughout guideline development.

Interpretation: The guideline will support Canadian families and clinicians to make informed, value-sensitive and evidence-based clinical decisions related to managing pediatric obesity. The guideline and accompanying resources for end-users will be published in English and French, and we will partner with Obesity Canada to optimize dissemination using integrated and end-of-project knowledge translation.

Pediatric obesity is a global health issue. Worldwide, the number of 5- to 19-year-olds with obesity increased from 11 million in 1975 to 124 million in 2016.¹ In Canada, levels remain high, with approximately one-quarter of 4- to 11-year-olds and one-third of 12- to 17-year-olds classified as having overweight or obesity.²⁻⁴ This high prevalence is concerning as metabolic, mechanical and mental health issues as well as social milieu concerns are common in children and adolescents with obesity.⁵ Further, obesity seldom resolves spontaneously,^{6,7} and longer exposure to obesity is associated with prolonged and increased morbidity.⁸ As such, there is an imperative to develop and evaluate interventions that are effective for managing pediatric obesity.

Since the first Canadian clinical practice guideline on managing and preventing obesity in adults and children was published in 2007,⁹ several pediatric-specific guidelines have been published, in Canada¹⁰ and internationally.^{11,12} These guidelines were based on evidence regarding the potential

benefits and harms of obesity management strategies; however, there is a need to update existing recommendations because new evidence has accumulated and methodologic approaches have evolved over recent years. As highlighted in the 2020 Canadian guideline for adult obesity,¹³ managing obesity extends beyond addressing weight; management includes a host of outcomes (e.g., mental health) and issues (e.g., obesity stigma) that reflect a broad view of health and social well-being. Historically, guidelines have emphasized treatment effects and seldom included families and clinicians

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as stakeholders in developing, refining and evaluating recommendations on the basis of stakeholder values and preferences.

The purpose of this protocol is to describe the organizational approach and methodologic strategies used to update the 2007 Canadian clinical practice guideline for managing pediatric obesity. With a focus on obesity management exclusively, we will direct our resources to provide optimal value and preference-sensitive, evidence-based guidance for families and clinicians to manage pediatric obesity, according to international standards for guideline production.

Methods

We will follow guideline standards set by the National Academy of Medicine (formerly the Institute of Medicine),¹⁴ the Grading of Recommendations Assessment, Development and Evaluation (GRADE) working group¹⁵⁻¹⁷ and the Guidelines International Network.¹⁸ These methods promote transparency, clear and ongoing management of competing interests, engagement of diverse stakeholders, use of systematic review methodology to synthesize all existing evidence addressing the area(s) of inquiry and use of explicit methods for determining the strength of recommendations (Box 1). Resources from the Alberta Health Services Chair in Obesity Research and Obesity Canada will be used to develop the guideline and support knowledge translation and dissemination activities.

Composition of participating groups

The guideline steering committee (“the committee”) will be responsible for guiding all activities, overseeing finances, granting final acceptance of the guideline recommendations and disseminating the finalized recommendations. The committee will also oversee the development of the research questions, the literature reviews and the development of the guideline methods and will vote on the final recommendations, as well as manage any competing interests among members.

Box 1: Certainty of evidence¹⁹

GRADE* and definition

- **High:** We are very confident that the true effect lies close to that of the estimate of the effect.
- **Moderate:** We are moderately confident in the effect estimate. The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
- **Low:** Our confidence in the effect estimate is limited. The true effect may be substantially different from the estimate of the effect.
- **Very low:** We have very little confidence in the effect estimate. The true effect is likely to be substantially different from the estimate of effect.

Note: GRADE = Grading of Recommendations Assessment, Development and Evaluation.

*Although certainty of evidence is a continuum, GRADE uses discrete categorization, which introduces a degree of subjectivity. Nevertheless, the advantages of simplicity and transparency outweigh these limitations.

In early 2019, the committee chair (G.D.C.B.) and Obesity Canada invited people with clinical and research expertise in pediatric obesity, systematic reviews and guideline development to join the committee. At this time, we also contacted about 30 provincial and national stakeholder groups to raise awareness of our plan to update the guideline and identify opportunities for collaboration and partnership.

Over time, additional committee members, including clinicians and caregivers of children and adolescents with obesity, were recruited from within and beyond multidisciplinary pediatric obesity management clinics; these include 1 professional–public association representative, 2 clinicians (1 general pediatrician and 1 general pediatrician who is an adolescent medicine specialist), 3 caregivers, 5 PhD researchers and 9 clinician-researchers (6 pediatric endocrinologists, 1 psychologist, 1 registered dietitian and 1 registered nurse).

Each month, the committee meets formally by videoconference with ad hoc correspondence as needed. The committee chair (G.D.C.B.) is responsible for assembling the committee, coordinating meetings, supporting authors who will be leading or coleading the systematic reviews with researchers in the McMaster Evidence Review and Synthesis Team (MERST; McMaster University, Hamilton, Ontario) and the Alberta Strategy for Patient-Oriented Research SUPPORT Unit (AbSPORU; University of Alberta, Edmonton) and leading knowledge translation and dissemination activities in partnership with Obesity Canada. Committee members with expertise in evidence syntheses and guideline development will be responsible for creating relevant content (e.g., summary of findings tables). In addition, caregivers, youth, clinicians, researchers and trainees with complementary experience and expertise will contribute to this work.

Five teams will be formed to complete literature reviews on the 5 topics listed below. These teams will include content experts in lead or colead roles and methodologic experts from MERST and AbSPORU.

Selection of key questions

To inform the guideline, literature reviews will be conducted to answer the following 5 questions, which the committee developed through numerous teleconferences and email discussions, following an iterative process (Table 1):

1. What are the values, preferences, perceptions, attitudes and beliefs of children and adolescents with obesity and their caregivers regarding the benefits and harms (in the context of important health-related outcomes) of obesity management strategies?
2. What tools, processes and procedures are recommended by expert groups for the clinical assessment of children and adolescents with obesity? What are the gaps in the existing guidelines?
3. Among children and adolescents with obesity, what is the effect of psychological and behavioural change interventions (see Appendix 1, available at www.cmajopen.ca/content/10/1/E155/suppl/DC1, for definition) on health outcomes deemed important to stakeholders, including families, clinicians and researchers?

4. Among children and adolescents with obesity, what is the effect of pharmacotherapeutic interventions on health outcomes deemed important to stakeholders, including families, clinicians and researchers?
5. Among children and adolescents with obesity, what is the effect of bariatric surgery interventions on health outcomes deemed important to stakeholders, including families, clinicians and researchers?

Of these 5 questions, 2 questions (values and preferences; clinical assessment) highlight contextual issues that are relevant to families and clinicians and 3 questions focus on primary interventions (psychological and behavioural; pharmacotherapeutic; and surgical) used in managing pediatric obesity.

We will conduct systematic reviews for questions 1, 3, 4 and 5 and an environmental scan and scoping review for question 2. The committee will operationalize the research questions for

Table 1 (part 1 of 2): Overview of literature reviews that will address research questions to inform the guideline

Question	Review type	Study designs included	Comparison	Follow-up duration (after baseline)	Potential outcomes*	Potential subgroups and sensitivity analysis*
1. What are values, preferences, perceptions, attitudes and beliefs of children and adolescents with obesity and their caregivers regarding the benefits and harms (in the context of important health-related outcomes) of obesity management strategies?	Systematic review	Any	NA	NA	<ul style="list-style-type: none"> • Perceptions, experiences, attitudes, beliefs and expectations 	<ul style="list-style-type: none"> • Children, adolescents and parents • Sex, gender • Ethnicity, culture, SES • Typical v. atypical growth and development (physical or cognitive delay or disability)
2. What tools, processes and procedures are recommended by expert groups for the clinical assessment of children and adolescents with obesity? What are the gaps in the existing guidelines?	Scoping review, with stakeholder consultation	Any	NA	NA	<ul style="list-style-type: none"> • Edmonton Obesity Staging System for Pediatrics,²³ including the 4 Ms (metabolic health, mental health, mechanical health and social milieu) 	<ul style="list-style-type: none"> • Children, adolescents, and parents • Sex, gender • Ethnicity, culture, SES • Typical v. atypical growth and maturation (physical or cognitive delay or disability) • Communication and terminology • Weight bias and stigma • Screening, enrolment and follow-up
3. Among children and adolescents with obesity, what is the effect of psychological and behavioural change interventions (see Appendix 1 for definition) on health outcomes deemed important to stakeholders, including families, clinicians and researchers?	Systematic review and meta-analysis	Randomized controlled trials	Any nonactive (e.g., wait-list control) or active (e.g., standard care) alternative management strategies	Immediate post and longest follow-up (closest to 12 mo)	<ul style="list-style-type: none"> • Anthropometry (e.g., body weight, BMI, WC) • Cardiometabolic risk factors (e.g., blood pressure, insulin resistance, HDL-C) • Outcomes reported by patients or proxies (caregivers) (e.g., anxiety, depression, health-related quality of life) • Adverse events 	<ul style="list-style-type: none"> • Age • Weight status • Sex, gender • Risk of bias • If we identify studies that reported data at ≥ 16 mo, we will assess the 12-mo estimate with and without these data

Table 1 (part 2 of 2): Overview of literature reviews that will address research questions to inform the guideline

Question	Review type	Study designs included	Comparison	Follow-up duration (after baseline)	Potential outcomes*	Potential subgroups and sensitivity analysis*
4. Among children and adolescents with obesity, what is the effect of pharmacotherapeutic interventions on health outcomes deemed important to stakeholders, including families, clinicians and researchers?	Systematic review and meta-analysis	Randomized controlled trials	Any nonactive (e.g., wait list control) or active (e.g., standard care) alternative management strategies	Immediate post and longest follow-up (closest to 12 mo)	<ul style="list-style-type: none"> Anthropometry (e.g., body weight, BMI, WC) Cardiometabolic risk factors (e.g., blood pressure, insulin resistance, HDL-C) Outcomes reported by patients or proxies (caregivers) (e.g., anxiety, depression, health-related quality of life) Adverse events 	<ul style="list-style-type: none"> Age Weight status Sex, gender Risk of bias If we identify studies that reported data at ≥ 16 mo, we will assess the 12-mo estimate with and without these data
5. Among children and adolescents with obesity, what is the effect of bariatric surgery interventions on health outcomes deemed important to stakeholders, including families, clinicians and researchers?	Systematic review and meta-analysis	Randomized controlled trials, prospective or retrospective cohort studies and other observational studies	Any nonactive (e.g., wait list control) or active (e.g., standard care) alternative management strategies	For the weight outcomes up to 12 mo; 18-mo and longest follow-up; for other outcomes up to 18 mo	<ul style="list-style-type: none"> Anthropometry (e.g., body weight, BMI, WC) Cardiometabolic risk factors (e.g., blood pressure, insulin resistance, HDL-C) Outcomes reported by patients or proxies (caregivers) (e.g., anxiety, depression, health-related quality of life) Adverse events 	<ul style="list-style-type: none"> Age Weight status Sex, gender Risk of bias If we identify studies that reported data at ≥ 16 mo, we will assess the 12-mo estimate with and without these data

Note: BMI = body mass index, HDL-C = high-density lipoprotein cholesterol, NA = not applicable, SES = socioeconomic status, WC = waist circumference.
 *Potential outcomes and subgroups will be determined on the basis of data derived from surveys with stakeholders (parents, clinicians and researchers).

the 3 intervention-related systematic reviews (questions 3, 4 and 5) regarding intervention characteristics, accepted comparators, ranking of outcomes by their relative importance to patients, and selection of subgroups on the basis of literature-derived, clinically relevant effect modifiers. For each of these intervention-related reviews, outcomes of interest will be determined using an online survey of stakeholders, including committee members and caregivers of children and adolescents enrolled in multidisciplinary obesity management clinics in several Canadian centres. These data will help to ensure the guideline is relevant and meaningful to its end users: families and clinicians.¹⁸ Survey participants will rate health outcomes of interest on the basis of the extent to which they believe the outcomes are important to decision-making for obesity management. Outcomes will be rated using the following rubric: 1–3 (not important for making a decision), 4–6 (important, but not critical for making a decision) and 7–9 (critical for making a decision).¹⁹ A detailed description of the scope and characteristics of eligible interventions and studies for each of the

3 intervention-related reviews will be determined iteratively through committee member discussions, considering available evidence on child, adolescent and family relevance, feasibility and acceptability.

Summarizing the evidence

The Knowledge Translation Platform within AbSPORU will lead and support activities related to the reviews of values and preferences and clinical assessment. The MERST team will lead the systematic reviews for the 3 intervention-related reviews.

For our systematic review on values and preferences, we will include systematic reviews, primary quantitative studies (such as surveys, health state value studies [e.g., standard gamble, time trade-off, visual analogue scale for a specific outcome], direct choice studies [e.g., choice when presented with decision aid, probabilistic trade-off techniques, conjoint analysis willingness to pay, randomized controlled trials on preferences]), qualitative studies (such as interviews, focus groups) and mixed-methods studies that include children and adolescents aged 0 to 18 years

and their families. Studies included in this review will explore the values, preferences, perceptions, attitudes and beliefs of children and adolescents with obesity and their caregivers with an emphasis on the best estimates of benefits and harms (in the context of important health-related outcomes) of obesity management strategies, described below.

To inform the recommendations on the clinical assessment of children and adolescents with obesity, we will carry out several sequential steps. First, we will conduct an environmental scan of existing clinical practice guidelines and expert recommendations for the assessment of pediatric obesity. From these sources, a table detailing the processes, procedures and methods used to complete a clinical assessment will be created to identify unique and common elements, identify gaps in the evidence and inform the generation of the research question(s) that will guide a scoping review. Second, we will complete a scoping review that adheres to established scoping review methods as described by the Joanna Briggs Institute²⁰ and the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) for Scoping Reviews (PRISMA-ScR) statement checklist.²¹ Third, we will evaluate the methodologic quality of the guidelines included in our scoping review using the Appraisal of Guidelines for Research and Evaluation AGREE II tool, which is widely recognized as the standard tool for evaluating practice guidelines.²² Finally, we will complete a stakeholder consultation (e.g., with caregivers and clinicians) to solicit feedback before finalizing and publishing the review. To provide a framework for the results of this review, information will be organized according to the 4 M health risks (metabolic health, mental health, mechanical health and social milieu); this approach is based on the Edmonton Obesity Staging System for Pediatrics.²³ Issues of communication, bias and stigma, screening and follow-up, as well as relevant subgroups, will be included.

For our 3 intervention-related reviews (psychological and behavioural; pharmacotherapeutic; and surgical), we will access data from randomized clinical trials (RCTs), including controlled clinical trials (CCTs), that include children and adolescents aged 0 to 18 years and have safety and effectiveness data for our interventions of interest, immediately after the intervention and at the longest point of follow-up (see Appendix 2, available at www.cmajopen.ca/content/10/1/E155/suppl/DC1, for details regarding analysis of time points and follow-up). For our review on surgical interventions, we will include observational studies in addition to RCTs and CCTs. On the basis of the committee members' experience, it is unlikely that many surgical studies will have randomly assigned participants to different study arms; in this emerging field of more intensive therapies for managing pediatric obesity, cohorts and case series have been more common, so a range of study designs will be included.

The MERST and AbSPORU evidence centre teams will review titles and abstracts in duplicate; articles marked for inclusion will proceed to full-text relevance testing. Full-text screening will be completed independently by 2 team members, with consensus required for inclusion or exclusion. Multiple publications for the same primary intervention in the same cohort will be merged. Standardized forms for data

extraction and risk of bias will be developed, piloted and used by the team. Risk of bias assessments will be conducted using the Cochrane risk-of-bias tool for RCTs²⁴ and the Risk of Bias in Non-randomized Studies – of Interventions (ROBINS-I) for observational studies with comparison groups²⁵ and the CLARITY group's Tool to Assess Risk of Bias in Cohort Studies (<http://help.magicapp.org/knowledgebase/articles/327941-tool-to-assess-risk-of-bias-in-cohort-studies>). If interventions have multiple treatment arms, we will follow Cochrane guidance on avoiding unit of analysis errors and only the interventions that meet inclusion criteria will be extracted.²⁴ Following GRADE guidance, we will use data from complete cases in the primary analysis and assess for risk of bias associated with missing outcome data.²⁶ Conflicts will be resolved through discussion, and a biostatistician will independently verify all data extraction.

Piloted data extraction forms will be used to extract information on study characteristics (e.g., design, sample size), participant characteristics (e.g., age, ethnicity), intervention and comparison characteristics (e.g., duration, dose), outcomes (e.g., definition, measurement) and results (e.g., number of events). All extracted data will be independently verified by a second reviewer, with the outcome data verified by a third person.

We will follow methods presented in the Cochrane handbook, ensuring a rigorous approach to planning, conducting and reporting systematic reviews.²⁴ Each systematic review and meta-analysis, when relevant, will follow PRISMA²⁷ and report on the outcomes ranked as important or critically important on the basis of our stakeholder survey. For each review, we will develop a peer-reviewed, comprehensive search strategy in consultation with expert librarians (from McMaster University and the University of Alberta) to identify all relevant studies. PRISMA reporting guidance and registration of the protocols in International Prospective Register of Systematic Reviews (PROSPERO [<https://www.crd.york.ac.uk/prospero/>]) and the Open Science Framework (<https://osf.io/>) will serve to increase the completeness, methodologic quality, transparency and reliability of our reviews.²⁷

Data analysis

For our 3 intervention-related reviews, data will be summarized and random effects meta-analyses will be conducted when at least 2 studies that are sufficiently homogenous have defined and reported an outcome similarly. Depending on the number and types of studies and intervention arms, we may conduct a network meta-analysis.^{28,29} Estimates of effect, namely pooled relative risks and risk differences for dichotomous outcomes and weighted or standardized mean differences for continuous outcomes, will be generated with 95% confidence intervals. To optimize the interpretability of our results for stakeholders, in addition to presenting standardized mean differences for studies that report different outcomes that measure the construct, we will consider supplementary methods of presenting effect estimates, including the magnitude of effect, by presenting results in relation to the minimal important difference (e.g., ≥ 0.25 reduction in body mass index z score) when credible minimal important differences exist.³⁰⁻³³

For all meta-analyses with at least 10 studies, the potential for publication bias will be assessed using a funnel plot.³⁴ Statistical heterogeneity in effect estimates across studies will be assessed by visual inspection of forest plots and assessment of the I^2 statistic, using thresholds recommended by Cochrane to determine degree of heterogeneity.³⁵ Heterogeneity will be assessed by conducting subgroup analyses that may help to explain observed effects. Sensitivity analyses comparing studies rated as “lower” versus “higher” risk of bias will also be conducted. It is possible that effect estimates of interventions at higher risk of bias will be larger, exaggerating estimates of effect.³⁶

Evidence on the clinical rationale for the potential differences in the effects of interventions across subgroups, including age, sex or gender, and weight status will be used to evaluate effect modification on the basis of subgroup credibility criteria.^{37,38} Supplementing our a priori subgroup analyses, we will also consider post hoc subgroup analyses on the basis of suggestions from our guideline panel (which will include some members of the steering committee) when voting on recommendations.

Assessment of certainty of evidence

For our 4 systematic reviews, we will use the GRADE approach to rate the certainty of the overall body of evidence for each outcome summarized.^{15–17} On an outcome-by-outcome basis, for a systematic review based on RCTs, the GRADE approach starts at high-quality evidence and considers the presence of the following factors as potential reasons to reduce certainty: risk of bias, inconsistency of results, indirectness of evidence, imprecision and publication bias. For a systematic review derived from observational studies, the evidence starts at low quality; unsystematic clinical observations start at very low quality. However, the certainty may increase when a large effect or a credible dose–response gradient exists or when all plausible confounding or other biases may be working against the observed effect. While the certainty of a body of evidence will often represent a continuum, GRADE ultimately categorizes the certainty into 1 of 4 categories (Box 1).¹⁷

Development of recommendations

The committee will use evidence to decision (EtD) frameworks to move from evidence to recommendations.³⁹ These frameworks will enable our committee to consider all relevant criteria and use evidence in a structured, transparent manner to inform decisions related to recommendations. The frameworks encourage examining and considering different perspectives (individual v. public health) when making recommendations. As such, the Canadian clinical practice guideline for managing pediatric obesity will take a perspective at the level of the individual patient (child, adolescent or caregiver).

The following criteria will be considered by committee members for each intervention for which a recommendation will be made: overall certainty of the evidence; desirable effects of the intervention (e.g., benefits); undesirable effects of the intervention (e.g., harms); the balance between benefits and harms; the values and preferences of children, adolescents and their caregivers; any incurred costs for the individual and their families; and intervention acceptability and feasibility.³⁹

Committee members will follow a process of assessing the evidence for each criterion and making judgments (Appendix 3, available at www.cmajopen.ca/content/10/1/E155/suppl/DC1). Guideline committee members will complete an electronic GRADE EtD framework survey to help them apply GRADE evidence summaries in a structured and transparent way to develop the final recommendations.³⁹ Committee members will be asked to consider the evidence summaries for health outcomes; values and preferences; and the acceptability, feasibility and cost of a recommendation to change health behaviours, begin medication or undergo surgery. Consensus appraisal of evidence quality by reviewers will inform the level of evidence in these recommendations. During the final committee meeting, panel members will review the results of the GRADE EtD framework survey and consider the implications of those judgments for their recommendations.

This process will assist the committee to make final recommendations for or against the relevant interventions and to label the recommendations as strong or weak (also called conditional, discretionary or qualified).¹⁶ The strength of a recommendation will reflect the guideline committee’s level of certainty that desirable consequences will outweigh undesirable consequences when the recommendation is adhered to across the range of patients for whom the recommendation is intended. A recommendation is less likely to be strong when desirable and undesirable consequences are closely balanced or when the certainty in estimates of effects is low. Similarly, when uncertainty exists in estimates of values and preferences, or when resource use is high, the strength of a recommendation is likely to be weak. When relevant, the guideline committee may formulate recommendations tailored for specific subgroups.

Consistent with the process used to develop the adult obesity guideline,¹³ our committee will vote on each recommendation. If fewer than 75% of committee members agree on a given recommendation, but the recommendation is on a topic that is deemed to be essential for inclusion, the recommendation will be included as a key message. In these circumstances, the lead authors of the respective reviews will modify the wording of the recommendation for review and approval by the steering committee, which will also approve all the final recommendations. Recommendations will be stated in a concise, clear and actionable manner, with justification provided for each recommendation. The implications of strong and weak recommendations for different end-users are presented in Table 2.¹⁵

Internal and external review process

To ensure that the guideline, recommendations and accompanying tools and resources for clinicians are useful and relevant, all materials will be reviewed, both internally and externally. Internally, our committee and the teams that are leading our knowledge syntheses will prepare and draft all documents. These materials will then be reviewed externally by a diverse group of stakeholders, including families, clinicians, researchers and administrators representing professional societies and governmental agencies.

Table 2: Implications of strong versus weak recommendations for end-users¹⁵

Implications	Strong recommendation	Weak recommendation
For patients	Most people in this situation would want the recommended course of action and only a small proportion would not.	Most people in this situation would want the suggested course of action, but many would not.
For clinicians	Most people should receive the recommended course of action. Adherence to this recommendation according to the guideline could be used as a quality criterion or performance indicator. Formal decision aids are not likely to be needed to help people make decisions consistent with their values and preferences.	Clinicians should recognize that different choices will be appropriate for different patients and that they must help each patient arrive at a management decision consistent with her or his values and preferences. Decision aids may be useful to help people to make decisions consistent with their values and preferences. Clinicians should expect to spend more time with patients when working toward a decision.
For policy-makers	The recommendation can be used to develop policy (e.g., taxation of products high in sugar or salt).	Policy-making will require substantial debates and involvement of many stakeholders. Policies are also more likely to vary between regions. Performance indicators would have to focus on the fact that adequate deliberation about the management options has taken place.

When our work began to update the guideline, one of our first tasks was to contact professional associations and governmental representatives to inform them of our plan. These stakeholders have been kept up to date regarding our activities.

Additionally, we will establish a family advisory panel, including both adolescents and caregivers, to solicit their input on our recommendations and accompanying educational tools and resources. When it comes time for documents to be reviewed externally, we will draw on their experience and expertise to seek feedback before the documents are revised (if indicated), finalized and disseminated. Our family advisory panel will contribute value and preference information regarding the results of our 3 intervention-related systematic reviews (psychological and behavioural; pharmacotherapeutic; and surgical), share perspectives and experiences relevant to our clinical assessment review, and provide guidance and input regarding our knowledge dissemination strategies.

We will strive to achieve consensus among stakeholders regarding our recommendations; however, for transparency, we will document any differences of opinion in perspective (e.g., acceptability, feasibility) within our GRADE EtD summary tables and our summary guideline document. If consensus cannot be achieved on a recommendation, it will be considered (and revised accordingly) for inclusion as a key message. A final step will include working with editorial and design professionals to harmonize the style and formatting of all relevant materials.

Management of competing interests

On an annual basis, each member of the guideline committee will complete a written declaration of potential competing interests using the International Committee of Medical Journal Editors’ disclosure form (<http://www.icmje.org/disclosure-of-interest/>). As circumstances and opportunities can change over time, at the beginning of each monthly teleconference,

committee members will be prompted to report any changes to their competing interests statement. The committee will discuss and decide whether any disclosed competing interests are acceptable and, when applicable, how they will be managed with respect to each review and recommendation. In lieu of holding a formal vote, the committee will discuss issues and resolve them collaboratively to achieve consensus.

If the chair has a competing interest that cannot be resolved through discussion, and to determine which committee members hold voting and nonvoting roles in establishing intervention-specific recommendations, our oversight subcommittee will convene, which will include 1 clinician-scientist, 1 methods expert, 1 caregiver representative and 1 stakeholder from Obesity Canada, to discuss and determine how the competing interest(s) will be addressed. Obesity Canada has developed and will manage for this project a competing interest policy and procedures for mitigating bias.

Individuals with relevant disclosures will not be excluded from conducting the critical appraisals or voting on recommendations. However, individuals with direct competing interests will be asked to abstain from voting in the areas in which they have the conflict. Our plan to manage committee members’ competing interests adheres to principles endorsed by the Guidelines International Network.⁴⁰

Any discussion regarding off-label use of drugs will include the caveat that the use is off-label. The views of the funding bodies (Obesity Canada FOCUS Fund, Alberta Health Services) will have no influence over the content of the guideline. All committee members will be volunteers and will not be remunerated for their services.

Ethics approval

Our survey of stakeholders was approved by human research ethics boards at the University of Alberta (Edmonton), The Hospital for Sick Children (Toronto), and the Children’s Hospital of Eastern Ontario (Ottawa).

Interpretation

The process of developing this guideline will bring together families living with obesity as well as multidisciplinary clinicians from across Canada to make informed, value-sensitive, evidence-based recommendations for managing pediatric obesity based on systematic reviews of the literature and internationally recognized guideline standards. We will produce health-related recommendations that are based on values and preferences expressed by families and informed by systematic reviews of obesity management strategies related to our target health outcomes.

Knowledge translation products and tools, with a focus on integration in clinical practice and dissemination of evidence and recommendations, will be fundamental to the success of the guideline recommendations. By including stakeholders (families, clinicians) in all activities and communicating and meeting regularly with committee members and external stakeholders, we will aim to ensure the guideline is responsive and relevant. Obesity Canada, which is sponsoring the guideline through in-kind contributions, will strive to integrate knowledge translation into the guideline development process by collaborating with knowledge translation experts as well as decision-makers, including patients, families and community members. Mechanisms to translate science to the public include a plain-language, bilingual website, blog series, infographics and whiteboard videos, public workshops, webinars, social media activities and a growing online support community for people living with obesity.

Through their public engagement and expertise in knowledge translation, Obesity Canada will support this guideline and share it with its network of health professionals and people living with obesity, integrate the guideline into its education programs designed to develop skills among clinicians and families affected by obesity, and disseminate the key findings to decision-makers across the country through its ongoing advocacy activities.

To optimize uptake, the guideline and companion documents for families and clinicians will be prepared originally in English, then translated into French. Obesity Canada will consult with federal, provincial and territorial decision-makers to identify barriers and facilitators for implementation.

Limitations

Our guideline will not be without limitations. First, we will address only obesity assessment and management. Given the large evidence base on potential preventive measures for obesity, and the resources required to coordinate a timely series of systematic reviews and linked recommendations for both prevention and management, our guideline will focus exclusively on the management of pediatric obesity. Second, as per the National Academy of Medicine standards,¹⁴ guidelines should be regularly updated. Although we have not yet secured funding to update our recommendations regularly, we intend to continue this work. We have communicated with the World Health Organization and the American Academy of Pediatrics to explore the possibility of developing a jointly

funded guideline in the future, which may improve efficiency and avoid duplication of effort. Third, we considered multiple outcomes and subgroups of interest for each of our 3 systematic reviews on interventions. On the basis of GRADE guidance¹⁷ and our survey of families and clinicians managing obesity, we will limit our outcomes to the ones deemed to be most important to our stakeholders. Our subgroups will be selected on the basis of the most robust evidence for effect modification, while leaving room for post hoc subgroup analyses based on guideline panel suggestions when voting on recommendations.

Conclusion

An updated, national guideline for assessing and managing pediatric obesity in Canada is needed because of the publication of relevant new evidence and the evolution of methods and standards for the development of trustworthy guidelines over the past decade. We present methods for the development of a guideline that adhere to the standards set by leading medical and methodologic groups and describe the guideline oversight and leadership structure, the approach to strict management of competing interests, the engagement of a diverse panel of stakeholders and the methods that will be used to synthesize existing evidence and to move from evidence to recommendations. Once published, the guideline will support children and adolescents, their caregivers and clinicians in Canada in making informed, value-sensitive and evidence-based clinical decisions related to the management of pediatric obesity.

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