

Healthy Pregnancy Weight Gain Continuing Medical Education Module Evaluation Results

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Introduction

Alberta Health Services (AHS), the University of Alberta ENRICH Research team and the University of Calgary developed an accredited continuing medical education (CME) module that was launched June 2018. The aim of the module was to improve health care provider (HCP) knowledge and strategies to better support healthy weight gain during pregnancy.

Purpose

This report summarizes the evaluation results for the first year of the Healthy Pregnancy Weight Gain CME module (June 2018-2019).

Background

The AHS Healthy Pregnancy Weight Gain project began in 2010 as a provincial population-wide strategy within the AHS Provincial Obesity Program with the purpose of promoting healthy weight gain among pregnant women in Alberta. As part of this project, AHS collaborated with the University of Alberta on an Alberta Innovates Health Solutions Collaborative Research Innovation Opportunities (CRIO) research grant in 2013 (2013-2019). The research program was titled, “[ENRICH](#): Promoting Appropriate Maternal Body Weights in Pregnancy and Postpartum through Healthy Dietary Intake”. The overall goal of the program was to improve maternal health by promoting optimal dietary intake and weight management in pregnancy and postpartum through innovative universal and selected strategies that meet the diverse needs of women across Alberta.

The program involved six projects identified by their objectives. AHS provided leadership to project objective three (PO3), which focused on identifying universal strategies to promote healthy weights and healthy eating in pregnancy and postpartum. This objective was achieved through two phases of work. The first phase of the project consisted of a needs assessment and identifying gaps through surveys completed by postpartum women and HCPs. Focus groups with women, as well as interviews with HCPs of various disciplines across Alberta, were conducted and analyzed. Recommendations from this phase included increasing HCP knowledge and awareness of healthy pregnancy weight gain information and guidelines, comfort in having conversations about weight gain between pregnant women and their providers, and awareness of current AHS resources. The second phase of PO3 focused on the development, implementation and evaluation of universal strategies to reach two target audiences: women and HCPs.

Digital Campaign (April 2016 – March 31, 2018)

A digital marketing campaign was implemented to target women with pregnancy weight gain health messages and promote the Healthy Parents, Healthy Children [website](#). A publication, [Digital marketing to promote healthy weight gain among pregnant women in Alberta: an implementation study](#), was published in the Journal of Medical Internet Research detailing this work (Graham et al., 2019).

CME Healthy Pregnancy Weight Gain Module (April 2016 – May, 2018)

An accredited continuing medical education (CME) module was developed and implemented to improve HCP discussions about weight gain with pregnant women.

Module Development

The module was developed in collaboration between the AHS Sexual & Reproductive Health Promotion team, the University of Alberta ENRICH Research Project, and the University of Calgary. Funding to develop the module was provided through the CRIO program grant from Alberta Innovates. The Sexual & Reproductive Health Promotion team developed the content, provided project coordination and operational funding for the ongoing maintenance of the module. The planning committee (Appendix A) provided content expertise and guidance throughout module development and various stakeholders were consulted across the province to review content and participate in the pilot testing phase. A member from the AHS Knowledge Translation and Evaluation team acted as the co-chair for the planning committee. The University of Calgary, Office of Continuing Medical Education & Professional Development (UofC CME&PD) provided instructional design, web content management and assistance with the planning and development of the module. The module is hosted on the UofC CME portal: <https://ecme.ucalgary.ca/programs/hpwg>

The module meets the accreditation requirements of the College of Family Physicians of Canada and the Royal College of Physicians and Surgeons of Canada (provides 1.5 Mainpro+ and 1.5 MOC Section 3 credits). It is available at no cost to all health professionals in Alberta who interact with pregnant women, including but not limited to, family physicians, midwives, nurses, obstetricians and dietitians. It takes approximately 1.5 hours to complete the module.

The module includes information about how to have effective conversations about weight and how to support women in achieving a healthy diet, physical activity and healthy weight gain during pregnancy. Module content was informed by gaps identified through local research consisting of HCP interviews (Morris et al., 2017), focus groups with women (Nikolopoulos et al., 2017), and an AHS project evaluation (Alberta Health Services, 2015). Content is also rooted in evidence-based information from current literature, established guidelines and best practices.

Module components include:

- pre/post-knowledge tests
- Alberta-specific information and resources
- practice tips from local health care providers
- quotes from pregnant women about their experiences
- voiceover presentation recordings from HCPs in Alberta
- interactive case scenario activities
- evaluation survey (mandatory for CME credit)

Objectives

The goal of the module is to assist HCPs in supporting women to achieve healthy dietary intake, regular physical activity and healthy weight gain during pregnancy. The objectives for participants are to:

- identify the influence of pre-pregnancy weight and pregnancy weight gain on maternal, infant and child health outcomes
- apply Health Canada's Gestational Weight Gain Guidelines
- utilize resources to support and counsel women on healthy weight gain during pregnancy
- apply strategies for providing tailored and patient-centered care to support women in gaining a healthy weight throughout pregnancy

The purpose of the evaluation is to examine the effectiveness of the module content and inform ongoing quality improvement. Evaluation results will be shared with stakeholders to inform them about module uptake and pregnancy weight gain counselling practices in Alberta.

Methods

The module was launched on June 4, 2018 and a communication plan was implemented to disseminate information to HCPs across Alberta. When registering for a University of Calgary CME program account, participants provide information on their location, degree/designation, and specialty. Prior to starting the module, users complete a knowledge test of 8 multiple choice questions. At the end of the training, the same test questions are asked to gain a sense of the module's influence on knowledge (Appendix B). However, because of the way the data is collected, it is not possible to link the pre and post test data.

Users are required to complete all of the module sections as well as an evaluation survey in order to receive CME credits. The survey asks participants to rate their response to several questions using a five point Likert scale: (1) Strongly Disagree to (5) Strongly Agree. The survey also contains open-ended questions to allow for more in depth responses. For this evaluation, the responses to these qualitative questions were analyzed, coded and themed by two members of the AHS Sexual & Reproductive Health Promotion team. Categories were created to organize the responses by using key words and phrases that appeared in the data. Responses were also examined according to participant profession, however, there were no distinct themes that emerged from the data.

Findings

By June 12, 2019, 277 people enrolled in the module. During this first year post-launch, 117 (42%) participants completed the module, 108 (39%) were in progress and 52 (19%) registered but had not yet started the module. Of the 117 participants who completed the module, 114 (97%) of them completed the evaluation survey. While the module is promoted to Alberta HCPs, there were 17 people who registered from other provinces. The majority of participants reported that they registered for the module after receiving an email notice (41%) and many others were told about the module by a manager or colleague (35%).

Participants were initially asked about their: age, location, profession, and how long they have been in their profession. Table 1 provides a summary of the demographic characteristics of the registrants who provided information. The majority work in family medicine, live in Calgary, and hold the designate of MD. The average number of years of practice reported was 10.7.



Table 1

Demographics of users registered for the module

		n (%)
Profession	Family Medicine/Primary Care	86 (38)
	Public Health	33 (15)
	ObGyn	23 (10)
	Dietitian/Nutrition	15 (7)
	Midwife	6 (3)
	Other (administration, anesthesiology, pediatrics, pharmacy, etc)	77 (34)
Location	Calgary	96 (42)
	Edmonton	29 (13)
	Red Deer	9 (4)
	Other (Alberta)	97 (43)
	Out of Province	17 (75)
Years of Practice	0-4	22
	5-9	14
	10-14	8
	15-19	4
	20-24	7
	>24	7

Satisfaction

The module was well received and highly rated by the participants. Mean satisfaction rating was 4.37/5 (SD 0.73). Participants reported that the case scenarios and inclusion of tools and resources were important components of the module (mean rating 4.2/5 and 4.0/5, respectively) and contributed most to their learning. The majority of participants agreed or strongly agreed that they found the module easy to navigate (82%) and felt that the information was appropriate to their learning needs (90%). Table 2: Participant responses after completing the module using a five point Likert scale: (1) Strongly Disagree to (5) Strongly Agree.

Table 2

Participant responses after completing the module using a five point Likert scale: (1) Strongly Disagree to (5) Strongly Agree

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A	Weighted Average
a) The program content enhanced my knowledge of healthy pregnancy weight gain.	2	0	6	55	51	0	4.34
b) The program met the stated objectives.	2	0	3	49	60	0	4.45
c) I learned something in this module that I will incorporate into my practice.	3	0	4	42	64	1	4.45
d) The program achieved the appropriate balance.	2	0	5	57	48	2	4.33
e) Overall, I am satisfied with this program.	2	0	5	53	53	1	4.37
f) I would recommend this module to a colleague.	2	0	6	45	60	1	4.42

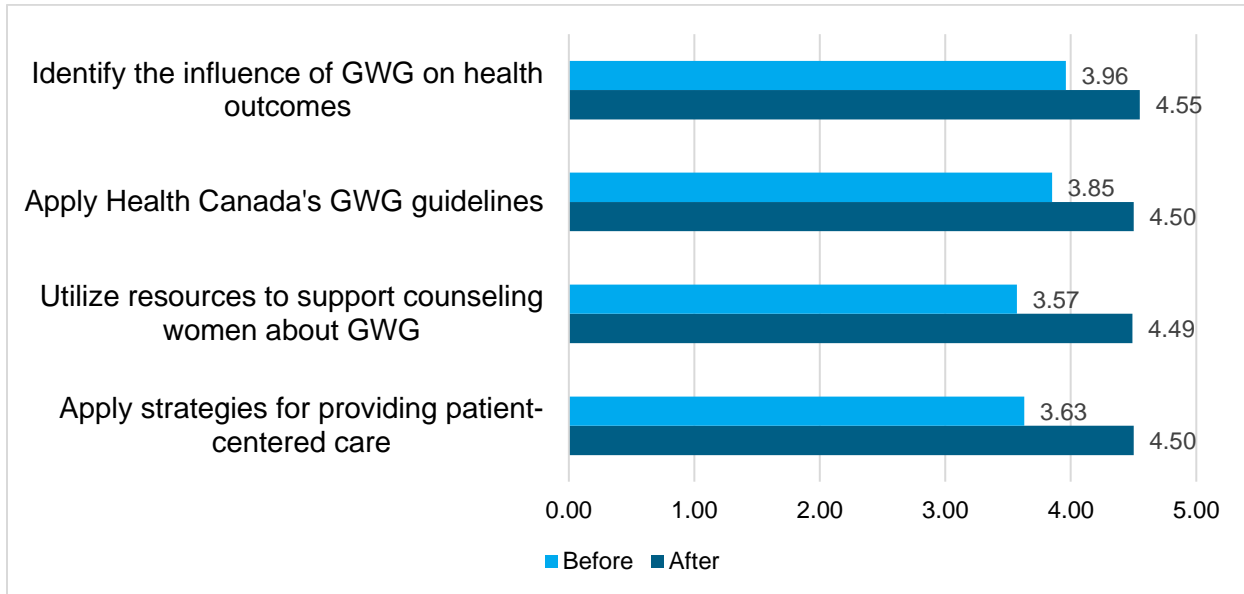
When asked how the module could be improved, 6 participants requested more information such as nutrition for gestational diabetes, exercise in pregnancy, and the relative contributions of diet and exercise to weight gain in pregnancy. Four participants suggested including additional case studies in the module and there were 14 suggestions to improve functionality and navigation of the module (e.g. include the option to have voiceovers as text, remove restrictions to move through module without completing each section, make it more obvious where to click for the next module section).

Knowledge

Self-assessment of participant knowledge and skills increased after completing the module. Most participants agreed (55/114) or strongly agreed (51/114) that the module enhanced their knowledge of healthy pregnancy weight gain. Participants also reported an increased perceived competence aligned with the module learning objectives (Figure 1).

Figure 1

Participant responses Self-perceived competence before and after completing the module



The percentage of correct answers for the knowledge post-test increased compared to the pre-test questions (Table 3). One person answered question 1 incorrectly for both the pre and post-test, which resulted in a small percentage decrease (0.28%) of correct answers for that question from the pre to the post test. This was a true or false question regarding the influence of HCP advice on women's weight gain. The largest increase in percentage of correct answers (increase of 29.9%) was for question 3 which asked participants to identify the risks involved when a woman gains above the recommended weight gain range.

Table 3

Correct answers for participants who answered pre and post-test questions

Test Question	Pre-Test			Post-Test		
	n Correct Answers	n Participants	% Correct Answers	n Correct Answers	n Participants	% Correct Answers
Q1	250	251	99.60	147	148	99.32
Q2	173	254	68.11	129	150	86.00
Q3	120	259	46.33	109	143	76.22
Q4	138	255	54.12	90	145	62.07
Q5	200	249	80.32	127	141	90.07
Q6	178	249	71.49	111	143	77.62
Q7	112	249	44.98	80	139	57.55
Q8	105	252	41.67	96	140	68.57

See Appendix B for a complete list of test questions.

The tests were not mandatory and some users had not yet completed the post-test.

Intention

The majority of participants agreed (42/114) or strongly agreed (64/114) that they learned something in the module that they will incorporate into their practice. See Figure 2 for examples of participant responses. The categories that emerged from the qualitative data for participant intentions are described below.

Change the conversation

Changing the conversation about weight gain with patients was mentioned by 51 participants. This included asking patients open ended questions, explicitly stating weight gain targets, as well as discussing weight gain earlier in pregnancy, more often, and/or with every patient.

Implement a patient-centered approach

This was a key theme represented throughout the module content and 46 participants mentioned that they intend to apply a patient-centered approach to their practice. Some participants mentioned that they will individualize care, focus on the patient needs, or look for ways to involve the patient in their own care.

Utilize a tool or resource

Incorporating a tool or resource that was mentioned in the module was reported by 24 participants. These included the pre-pregnancy BMI calculator, weight gain graphs, and the pregnancy weight gain poster.

Figure 2

Examples of participant responses of intended practice changes after completing the module

“Appropriate wording when addressing the topic. Use the breakdown of weight/week vs. total weight in pregnancy, as I find this is a question many patients have – give more of a clear picture of where they are at in their pregnancy.” -Nurse

“I will chart weight gain on the graphs provided by AHS for all of my clients. I will have more discussions about weight gain, diet, and exercise and make sure to use open-ended questions and reflective listening in those discussions.” -Midwife

“More women centred care, open ended questions. Listen to her suggestions as opposed to coming up with my own ideas for her situation.” -Obstetrician

“I am a dietitian in a rural community. Currently the doctors in the community are not referring pregnant women to me. I plan to connect with the doctors and encourage them to refer high risk pregnant patients. I am also going to encourage them to take this course.” -Dietitian

Barriers

Participants were asked to reflect on potential barriers that might prevent them from applying what they learned in the module.

- Time constraints was mentioned most frequently (22) and HCPs reported feeling rushed and not having enough time with patients
- Perceived system level barriers (8) included shared care practice with other health providers, lack of privacy for discussing weight with patients, and not having an EMR (electronic medical record) that tracks weight
- Barriers related to the patient (23), which included language and cultural barriers, as well as patient discomfort, avoidance, and noncompliance
- Personal barriers (6) such as forgetfulness, “my own ego”, and discomfort

Participants were asked in a subsequent question about what might help them to overcome barriers.

- Trying a new approach or technique (12) (e.g. address weight at every appointment, ask questions, set up reminders)
- Using a tool or resource (9) (e.g. an interpreter, weight gain graph, developing teaching sheets)
- Sharing information with other health providers (7) (e.g. encourage colleagues to complete the module, document discussions for the next provider)
- Making weight gain discussions a priority with patients (10)

Limitations

A main limitation of the evaluation was the use of self-report for changes in competence after completing the module. Future investigation of behavior changes after completing the module could confirm self-reported changes, as well as intentions for practice and build upon study findings. Furthermore, while it was notable that positive changes were consistent across all professions, specific themes by user profession were not evident. As more participants complete the module, new trends may emerge. Evaluation results will be examined annually to confirm or add to these evaluation findings and to inform quality improvement.

Conclusions

The module appears to positively impact self-reported knowledge of healthy pregnancy weight gain concepts and counselling skills. Supporting HCPs to have effective discussions with pregnant women about lifestyle and weight gain is an important step towards better adherence to the weight gain guidelines and improving pregnancy outcomes.

Next steps

- Continue to promote the module and explore new marketing strategies
- Review the module for use of inclusive language
- Ongoing maintenance and quality improvement of module content.
- Consider improvement suggestions from participants:
 - provide a printable download of the speaker presentation and/or transcript of the voiceovers
 - create additional case scenarios for practice
 - review functionality for possible improvements (change the hover-over function, mobile and tablet friendly, clearer navigation)

References

Alberta Health Services, (2015). Healthy Pregnancy Weight Gain Final Evaluation Report. <https://www.albertahealthservices.ca/assets/info/hp/hcf/if-hp-hcf-hpwg-final-evalreport.pdf>

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Appendix A

Planning Committee Membership

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Terri Miller	Manager, Sexual & Reproductive Health Promotion, Healthy Children and Families, Healthy Living, Population, Public and Indigenous Health, AHS
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Chloe Burnett	Education Consultant, Office of Continuing Medical Education & Professional Development, University of Calgary
Sheila Tyminski	Director, Nutrition Services, Population & Public Health Strategy, AHS
Dr. Kara Nerenberg	Physician, Internal Medicine, Dept. of Medicine and OB/GYN, University of Calgary
Dr. Sarah Makhdoom	Physician, Family Medicine, High River General Hospital, AHS
Jean Noble	Public Health Area Manager, Public Health, Central Zone, AHS

Appendix B

Pre/Post Test

1. The advice women receive from health care providers about weight gain can influence how much weight a woman gains.

- a) True
- b) False

2. Select the correct answer about pregnancy weight gain.

- a) All women should gain between 25-35lbs for best health outcomes
- b) Only women with a pre-pregnancy BMI of ≥ 25 require counselling about healthy pregnancy weight gain.
- c) Women with a pre-pregnancy BMI of < 18.5 are at risk of inappropriate weight gain.
- d) Women who are in the healthy pre-pregnancy BMI category of 18.5-24.9 are not at risk for giving birth to a baby large for gestational age.

3. When a woman gains above the recommended weight gain range, the risk is increased for: [select all that apply]

- a) Preterm birth
- b) Caesarean delivery
- c) Complications during labor and delivery
- d) Gestational diabetes
- e) Preeclampsia
- f) Post-partum weight retention

4. Weight gain within the recommended range for a woman's pre-pregnancy BMI can contribute to (select the correct answers): [select all that apply]

- a) Reduced incidence of population obesity
- b) Postpartum weight retention
- c) Decreased risk of poor birth outcomes
- d) Lower risk of obesity for the mother
- e) Lower risk of obesity for the child

Healthy Pregnancy Weight Gain

5. Which of the following statements are characteristics of a woman-centered approach?

- a) It's about supporting the woman but the health care provider has the final word
- b) It's about telling the woman what to do
- c) It should occur with every encounter
- d) It is an approach to be used when a woman requires additional support

6. Which statement are correct? [select all that apply]

- a) All women without contraindications should be encouraged to participate in aerobic and strength-conditioning exercise.
- b) Women who were inactive prior to pregnancy should not start exercising during pregnancy.
- c) Physical activity can help to limit excessive weight gain and prevent postpartum retention.
- d) Adverse pregnancy and neonatal outcomes are increased for women who exercise.

7. What are the different ways you can find a woman's recommended weight gain range in pregnancy (select the correct answers):

- a) Use the Alberta Health Services BMI calculator wheel
- b) Divide a pregnant woman's current weight in kg by her height in metres squared
- c) Use an online calculator such as the tool on the Healthy Parents, Healthy Children website
- d) You do not need to find a woman's recommended weight gain range

8. A pregnant woman who has a pre-pregnancy BMI in the overweight category should be advised to (select the correct answer):

- a) Eat no extra food servings in the first trimester but add 2-3 extra servings to her diet in the second and third trimester
- b) Eat no additional calories in the first or second trimester but add 450 calories in the third trimester
- c) Do not add any extra servings to her diet throughout pregnancy
- d) Restrict calorie intake if weight exceeds the recommended range during the pregnancy

Appendix C

Evaluation Survey

1. Rate your level of agreement on scale of 1-Strongly Disagree to 5-Strongly Agree.
The program content enhanced my knowledge of healthy pregnancy weight gain.
The program met the stated objectives.
I learned something in this module that I will incorporate into my practice.
The program achieved the appropriate balance.
Overall, I am satisfied with this program.
I would recommend this module to a colleague
2. Did you perceive any degree of bias in any part of the program? If yes, please comment.
Yes
No
If 'Yes', please comment.
3. Indicate which CanMEDS/CanMEDS-FM roles you felt were addressed from this learning activity. [check all that apply]
Medical Expert / Family Medicine Expert
Communicator
Collaborator
Leader
Health Advocate
Scholar
Professional
4. Rate your level of agreement with the following statements.
 - 1) Before completing the program, I was able to:
 - a) Identify the influence of maternal pre-pregnancy weight and pregnancy weight gain on maternal, infant and child health outcomes
 - b) Apply Health Canada's guidelines for pregnancy weight gain
 - c) Utilize resources to support counseling women about healthy weight gain during pregnancy
 - d) Apply strategies for providing tailored and woman-centered care to support women in gaining a healthy weight throughout pregnancy

Healthy Pregnancy Weight Gain

- 2) After completing the program, I was able to:
 - e) Identify the influence of maternal pre-pregnancy weight and pregnancy weight gain on maternal, infant and child health outcomes
 - f) Apply Health Canada's guidelines for pregnancy weight gain
 - g) Utilize resources to support counseling women about healthy weight gain during pregnancy
 - h) Apply strategies for providing tailored and woman-centered care to support women in gaining a healthy weight throughout pregnancy

5. How important were these program components in contributing to your learning success?
 - a) Pre-test
 - b) Post-test
 - c) Descriptive text
 - d) Voiceovers
 - e) Quotes from patients and health professionals
 - f) Case scenarios
 - g) Tools and Resources

6. Rate your level of agreement with the following statements
 - a) I found the program easy to navigate.
 - b) I found the content organized and easy to follow.
 - c) I found the amount of information provided to be appropriate to my learning needs.
 - d) I felt that the complexity of the information provided was appropriate to my learning needs.
 - e) I felt that the program included an appropriate balance between information and practice opportunities.

7. How could we improve the program?

8. If applicable, describe two ways in which you will change your practice in the next three months as a result of learning from this program.

9. What barriers might prevent you from applying what you've learned?

10. What might help to overcome these barriers?

Healthy Pregnancy Weight Gain

11. Which zone in Alberta do you work in?

- a) North
- b) Edmonton
- c) Calgary
- d) Central
- e) South
- f) Provincial
- g) N/A

12. Please indicate your profession:

- a) Family physician
- b) Obstetrician
- c) Midwife
- d) Nurse
- e) Dietitian
- f) Resident/Student
- g) Other (please specify your profession)

13. How many years of experience do you have working in pregnancy weight management?

- a) Less than one year
- b) 1-5 years
- c) 6-10 years
- d) More than 10 years
- e) N/A – I don't work with pregnant women

14. What type of facility do you typically work in?

- a) Primary Care Network
- b) Community/Public Health Centre
- c) Private Practice
- d) Other (please specify)

15. How did you hear about this module? (Check all that apply)

- a) Search for this topic on the UofC CME website or eLearning website
- b) Email notice
- c) Colleague
- d) Manager
- e) Mandated training
- f) Other (please specify)