

What are the best practices for reducing cardiometabolic risk in primary care?

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Disclosures

- No commercial declarations
- Non-profit disclosures - clinical co-lead of Queen Square FHT, Brampton Site Director - McMaster Family Medicine Residency Program, Co-lead - OCFP Practising Wisely course
- No relation to metabolic syndrome Canada except as co lead for FHT



Dr. Jobin Varughese MD, CCFP (COE), CMD

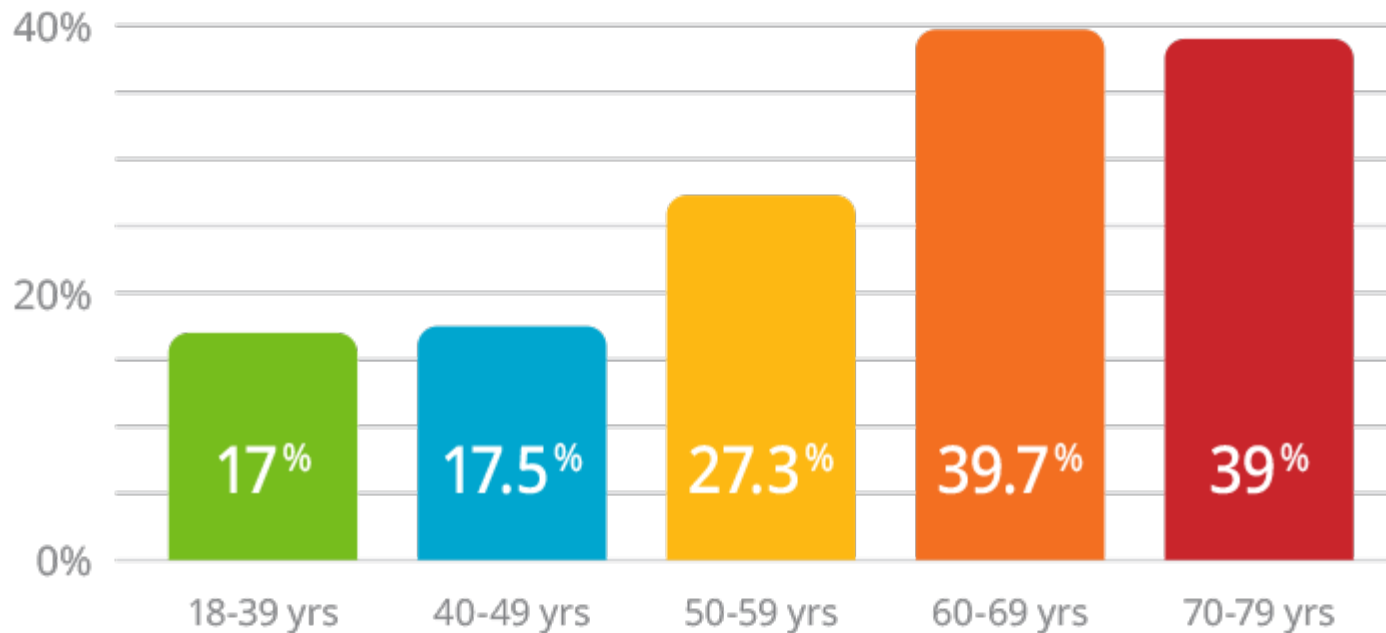
Learning Objectives

At the end of the session, participants will:

1. Become aware of the best practices from the CHANGE diet and exercise Program aimed at reducing cardiometabolic risk.
2. Learn about the results of the program on clinical outcomes and participant experiences.

Why Cardiometabolic risk-Metabolic Syndrome?

Metabolic Syndrome is a health crisis hiding in plain sight

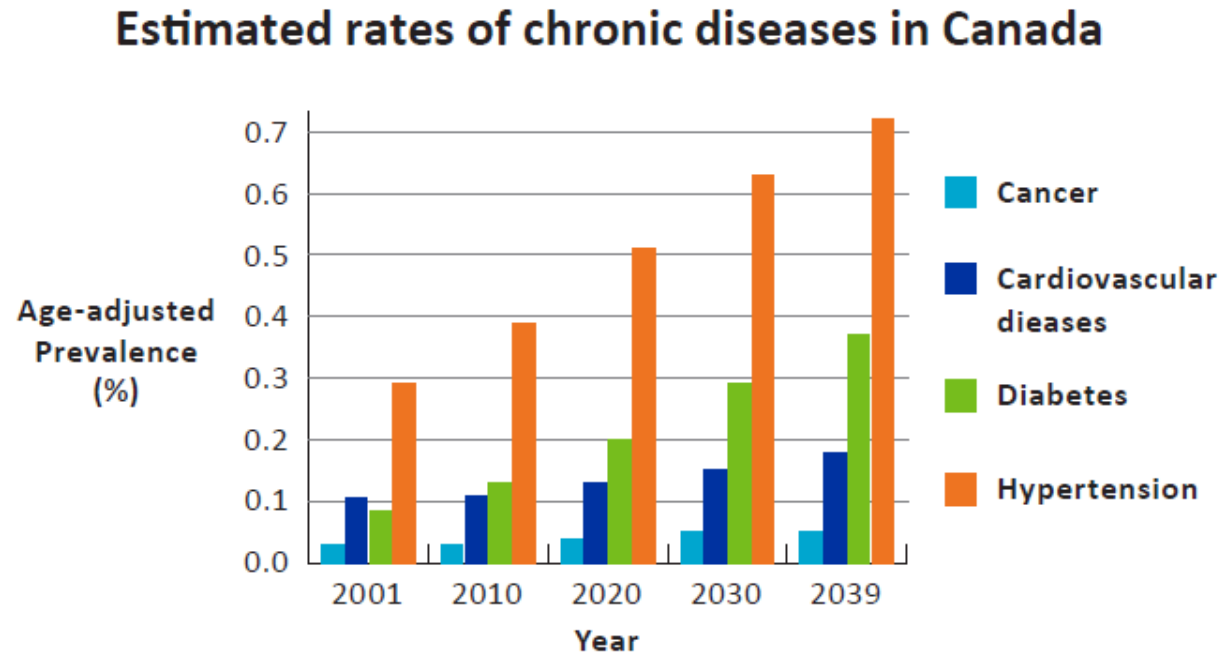


According to a 2014 study published in [Chronic Diseases and Injuries in Canada](#) (Rao et al, 2014), 19.1% of all Canadian adults — nearly 1 in 5 people — have Metabolic Syndrome (Natalie et al. CMAJ, 2011)

Incidence increases to 40% in ages 60 yrs and above

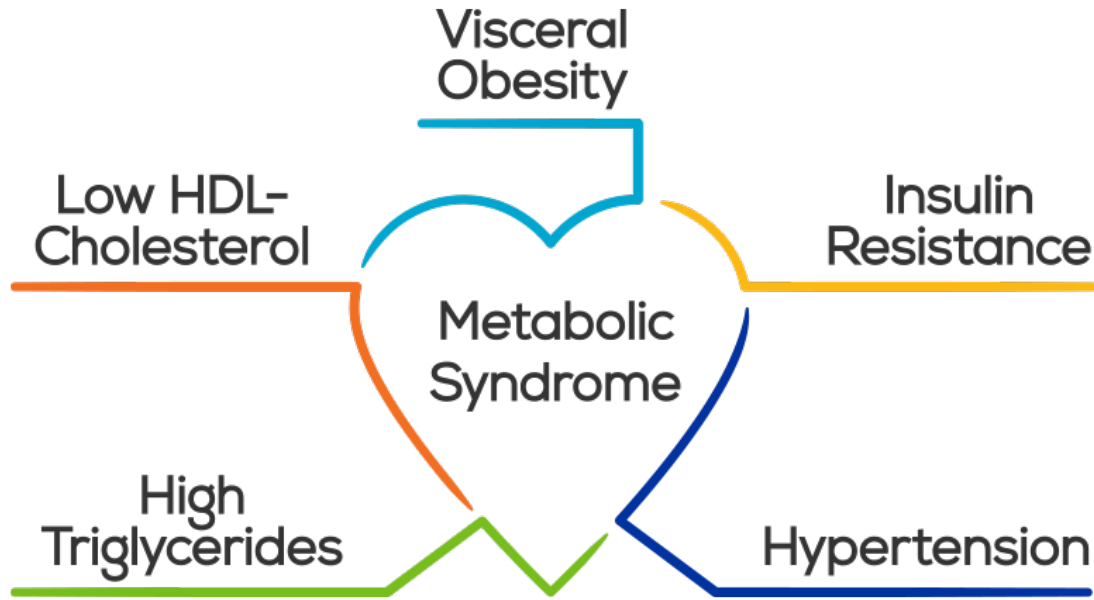
Economic impact of Metabolic Syndrome

MetS progresses to CVD and diabetes which alone account for >\$15 billion per year



Burden of Illness in Canada online tool by Public Health Agency of Canada 2010. <http://ebic-femc.phac-aspc.gc.ca/>

Metabolic Syndrome



When 3 of these are present:

- High blood pressure ($\geq 130/85$ mm Hg, or receiving medication)
- High blood glucose levels (≥ 5.6 mmol/L, or receiving medication)
- High triglycerides (≥ 1.7 mmol/L, or receiving medication)
- Low HDL-Cholesterol (< 1.0 mmol/L in men or < 1.3 mmol/L in women)
- Large waist circumference (≥ 94 cm in men, ≥ 80 cm in women; ranges vary according to ethnicity)

Metabolic Syndrome definition (3 out of 5 criteria)

Criteria	Ranges
Blood Pressure	$\geq 130/85$ mm Hg (<u>both have to be elevated</u>) or Receiving Pharmacotherapy for elevated BP
Fasting Blood Glucose	≥ 5.6 mmol/L or Receiving pharmacotherapy for elevated BS
Triglycerides	≥ 1.7 mmol/L or Receiving pharmacotherapy for elevated Trig
HDL-C	< 1.0 mmol/L males < 1.3 mmol/L females
Abdominal circumference	Canadian and US Whites, Europids, Whites, sub-Saharan Africans, Mediterranean, middle east (Arab) or unclear ethnicity ≥ 94 cm males, 80 cm females Asian and South Central Americans ≥ 90 cm males, 80 cm females

Knowledge/performance gaps

Well known that diet and exercise can reduce risk of developing cardiac disease, diabetes and MetS

- Mediterranean type diet pattern: strongest evidence by need to adapt to Canadian context
- Aerobic activity: strongest evidence, also needs to be individualized and gradual increase

However, physicians and teams have been challenged on how best to incorporate effective programs into practice.

- When lifestyle programs are implemented in primary care, they often focus on weight loss, are applicable to only a small group, or lack a team-based approach.
- It is often difficult to ascertain to what degree patients have been effectively empowered to make long term changes in their health.

Evidence based lifestyle interventions are needed that are feasible in the Ontario environment, support patient health and enhance physician practice.

Best Practices in diet and exercise for MetS



Based on the **best evidence** from diet and exercise research, the CHANGE Program is a unique lifestyle Intervention program created by leading health professionals at **Metabolic Syndrome Canada**

Metabolic Syndrome Canada is a not for profit organization aimed at improving health of Canadians through effective diet and exercise

Program Goals

1. provide family health clinics with the tools they need to offer effective, lasting lifestyle intervention to patients with metabolic syndrome
2. improve components of metabolic syndrome, diet quality and physical activity levels
3. empower participants to make long-term changes for overall well-being of patients

CHANGE Program Best Practices



Family MD



Team Approach
Registered Dietitian
Exercise Specialist



Personalization



Gradual



Close follow up X 1 year



*Flexible to meet
different needs*

Feasibility study 2017* showing

- ✓ reversal of MetS in 19% patients
- ✓ improvements in MetS components in 42% patients
- ✓ improvements in diet and exercise indices
- ✓ reduction in risk of cardiac events

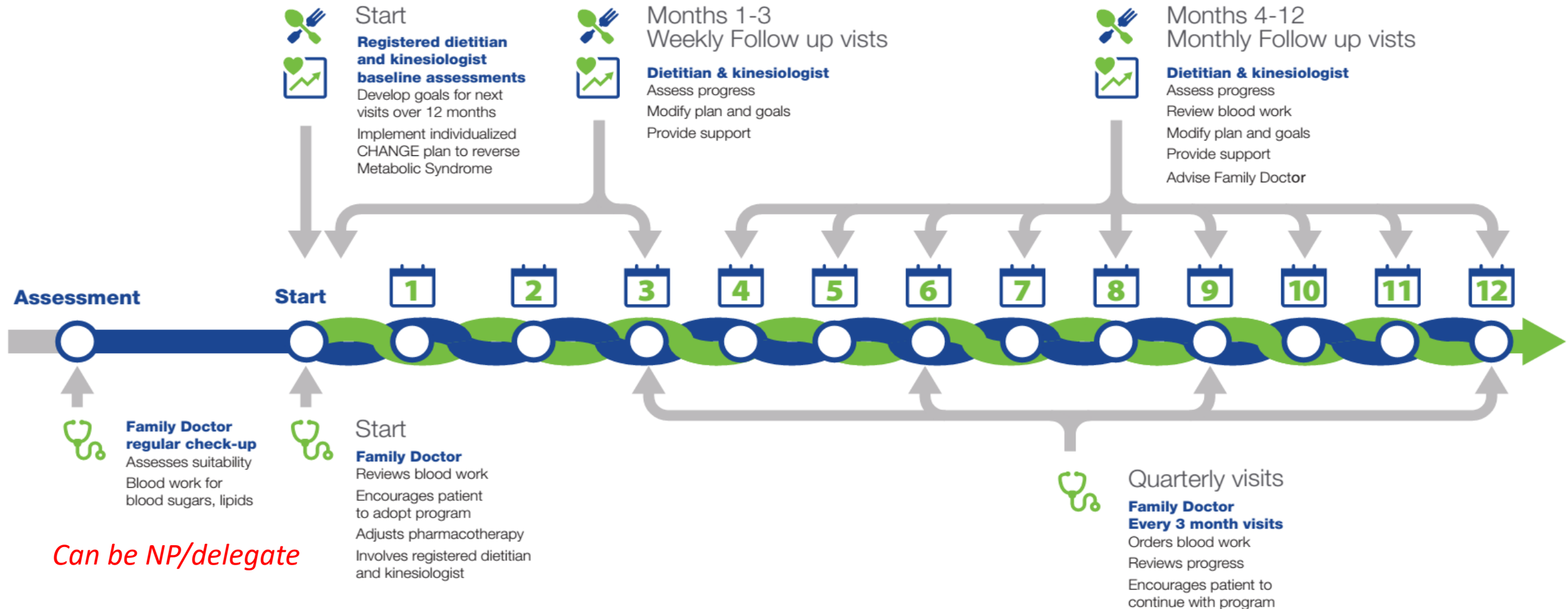
Patient Experiences paper 2018* showing

- ✓ significant improvements in patient confidence in making diet/exercise changes at end of program

**Jeejeebhoy et al CMAJ Open March 2017*

***Klein et al BMC Family Practice 2018*

Kinesiologist or physio/OT/Other

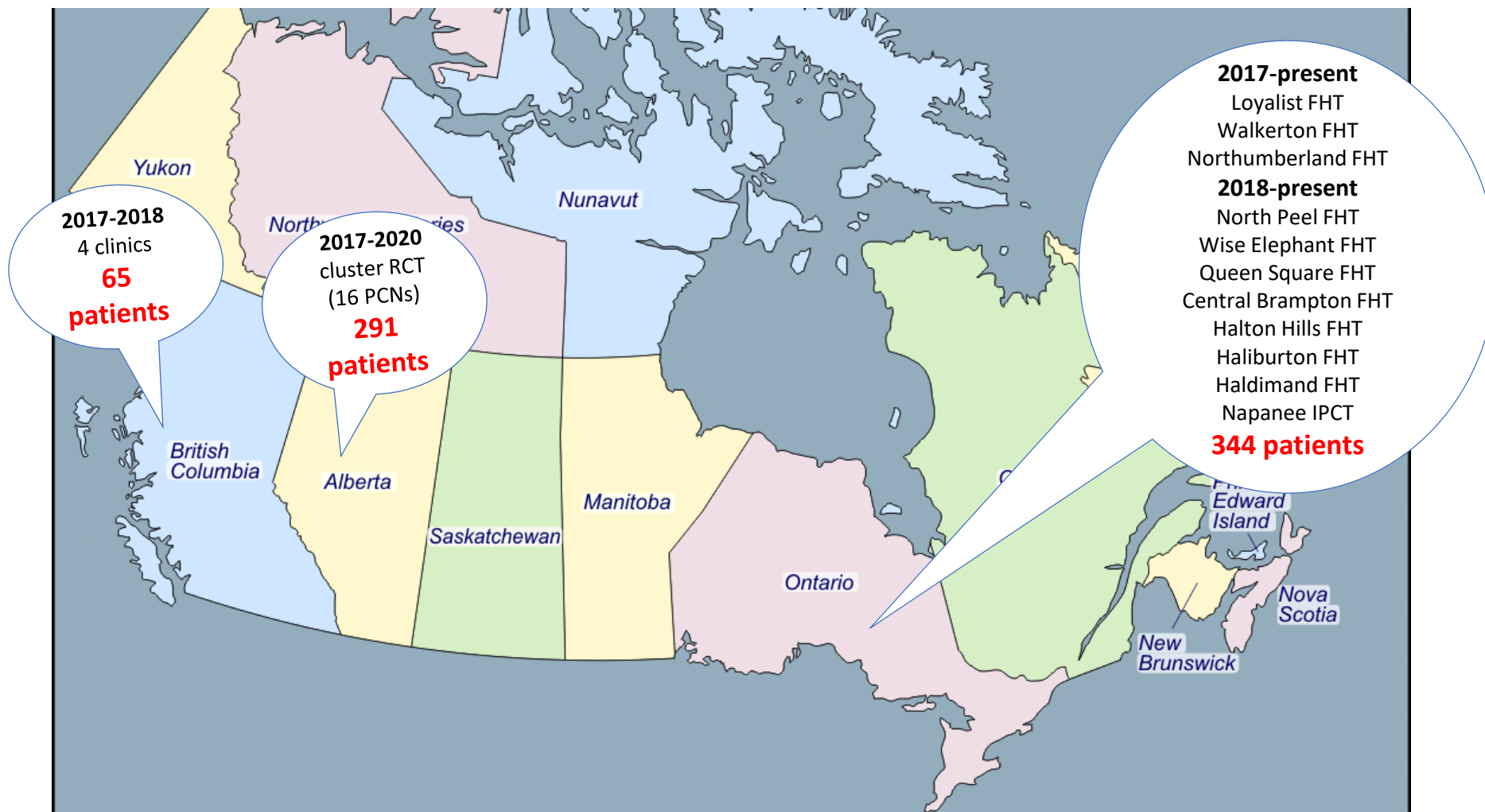


Program Implementation



MetSC
METABOLIC SYNDROME CANADA

700 patients in program across ON, BC and AB since 2017 (as of Sept 2019)



CHANGE in Halton-Peel

MetSC awarded OTF GROW grant early 2018

- ✓ To build on success of the CHANGE Program
- ✓ For scale up CHANGE in Halton Peel Region X 3 yrs
 - ✓ Focus on Brampton & Halton area FHTs
- ✓ Encouraging people to maintain active lifestyle
- ✓ Impact lives of 350 people in the community



An agency of the Government of Ontario
Un organisme du gouvernement de l'Ontario

Enrolment as of Sept 2019: ~180 patients



Program Evaluation: Outcomes*

At 3 months (n=242 patients), compared to baseline:

- MetS reversal rate (less than 3/5 criteria): 17% (95% CI 9.6-25.2%, $p<0.001$)
- Improvement in MetS components: 35% (95% CI 25.7-45.2%, $p<0.001$)
- 10 yr. PROCAM risk reduced from 8.1% to 7.2% ARR (0.9% [95% CI, -0.5 to 2.2%], $p=0.177$); RRR=12%
- Mediterranean Diet Score improved by 2.5 points (95% CI 2.1-2.9, $p<0.001$)
- Estimated VO2 max percentile: improved by 15.8% (95% CI 8.9-22.6%, $p<0.001$)

At 12 months (n = 88 patients), compared to baseline:

- MetS reversal rate (less than 3/5 criteria): 15% (95% CI -1.4-31.4%, $p=0.065$)
- Improvement in MetS components: 35% (95% CI 11.6-58.8%, $p=0.012$)
- 10 yr. PROCAM risk reduced from 9.9% to 8.6%, ARR 1.3% (95% CI -1.6% to 4.2%, $p=0.303$); RRR=13%
- Mediterranean Diet Score improved by 3.8 points (95% CI 2.7-4.9, $p<0.001$)
- Estimated VO2 max percentile: improved by 27.8% (95% CI 4.8-50.8%, $p=0.027$)

PROCAM Risk score: like Framingham risk score but for metabolic syndrome (Assman et al 2002 Circulation)

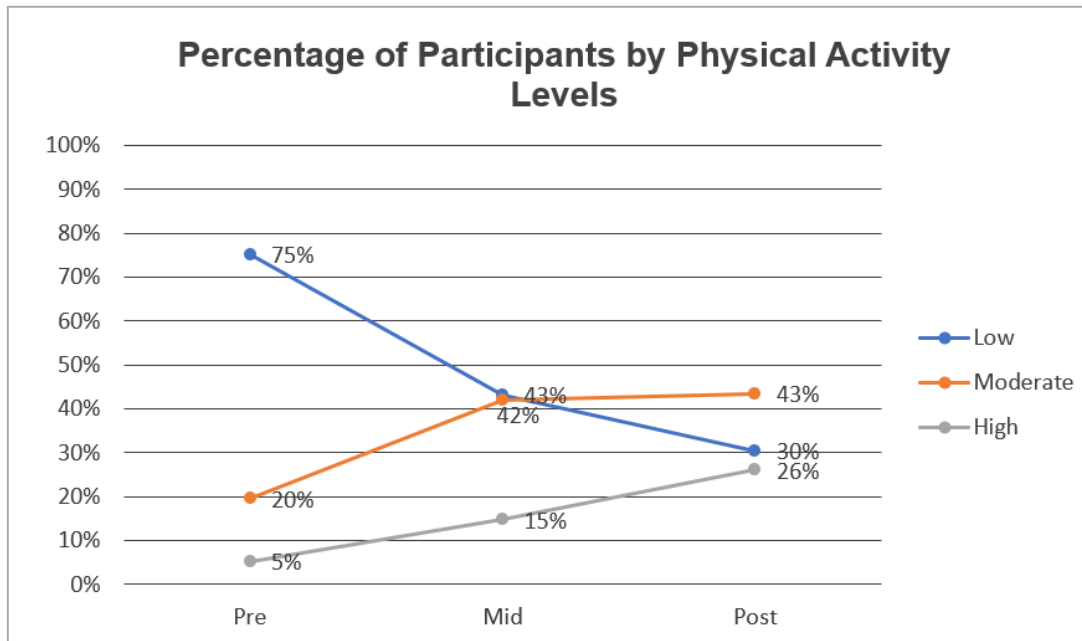
**As of September 2019, will evolve as more patient data becomes available*

ARR: Absolute risk reduction RRR: relative risk reduction

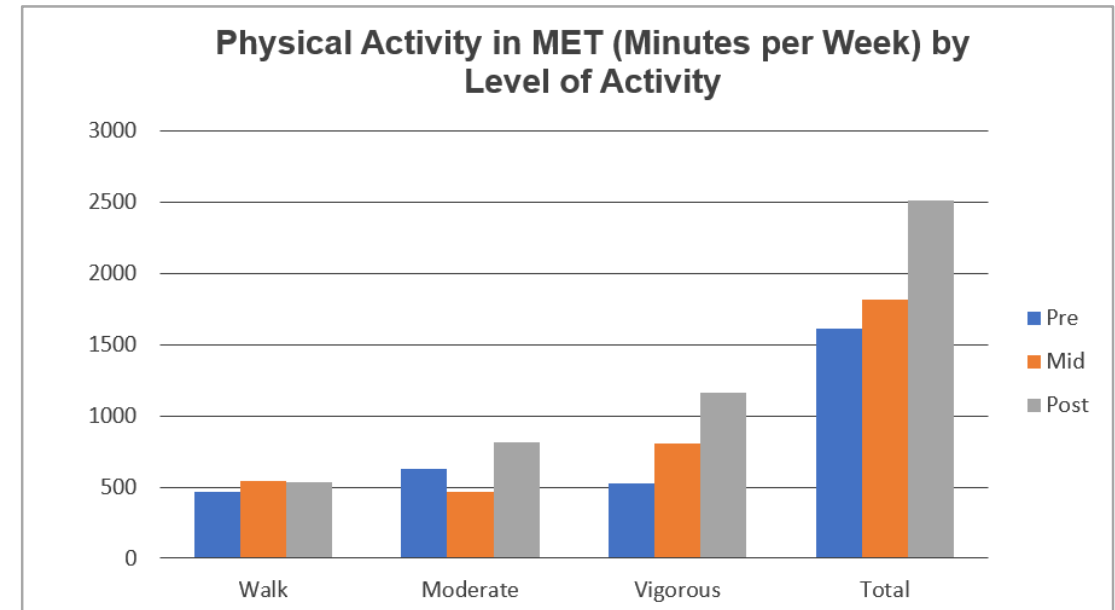
Program Evaluation: Physical Activity

International Physical Activity Questionnaire

Quality



Quantity



Program Evaluation: Patient Experiences

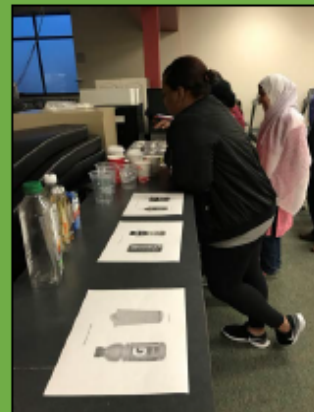
Patient Experiences

"We are very lucky to belong to the FHT and have been honored to be asked to be in this group"
Brockton Area Sept 2018

"I cannot say enough about how impressed and grateful I am for the warm, constructive support, education and non-judgemental attitude of the team. The approach utilized and engaged the whole person - cognitive, emotional and social dimensions. This approach generates commitment to change. I am very grateful."
Haliburton, May 2019

"The unhealthy eating habits that I had developed over many decades... are not easily "un-learned" and a one-shot visit to a medical professional was not going to change that. The re-programming of my attitudes and mis-information I held about eating are some of the benefits of the CHANGE program for me. A one size fits all advice would not have a long-term effect for me."
Brockton Area Sept 2018

"The CHANGE program has provided the information and incentive to help me modify how I approach food and exercise and has resulted in both weight loss and a reduction in my daily medication and insulin usage."
Kingston Area, Sept 2018



"The dedication, encouragement and commitment to see us succeed in our overall health and well being stands out in this program."
Brampton, June 2019

"My diabetes medication dose is cut in half in 3 months by doing more exercise and watching what I eat, I wonder why my doctor did not explain to me this before."
Brampton, January 2019

CHANGE Participants with FHT staff & group sessions

"We strongly recommend friends to join this program. Friends have commented that they are seeing great changes in us. The blood test also shows the improved results. We have told them to talk to their family doctor to get into the program."
Brampton July 2019

Take away messages

- ✓ Best practices in reducing cardiometabolic risk include the adoption of an evidence, team-based diet and exercise program of sufficient length and flexibility
- ✓ Such a program can improve clinical and patient outcomes

Questions about CHANGE Program contact Rupinder Dhaliwal, RD, FDC at rupinder@metasc.ca

Invitation to join a network

Screening and Lifestyle Interventions for Pre-diabetes & Metabolic Syndrome in Primary Care



Join this first ever network of researchers, clinicians and implementation specialists to improve the uptake of health system screening and structured health behaviour change to address prediabetes and metabolic syndrome in Canada

Goals

- Create an opportunity to interact and review ongoing work in the area
- Complete Delphi process for common outcome indicators for studies
- Identify possible funding opportunities across Canada
- Generate a research agenda of new collaborations & funding proposals
- Publish and publicize research agendas

Monthly Webinars planned for January-April 2020

Interested?

Contact pbrauer@uoguelph.ca