

Diabetic A1C testing and Diabetes management in rural Northwestern Ontario

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Disclosure of Affiliations, Financial Support, and Mitigating Bias

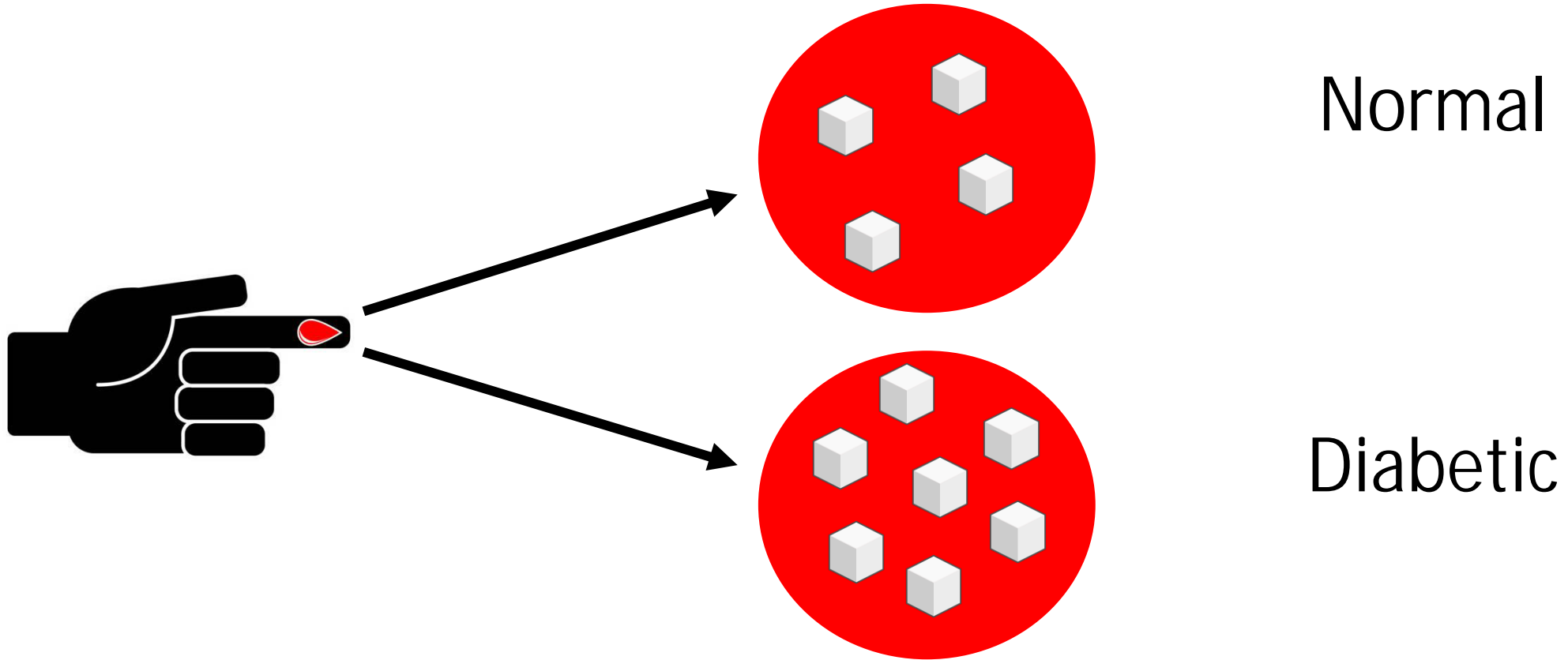
Affiliations:

- I have no relationships with for-profit or not-for-profit organizations.

Financial Support:

- This session/program has received financial support from NOAMA in the form of a Educational Grant

Diabetes



Type 1 Diabetes

Vs.

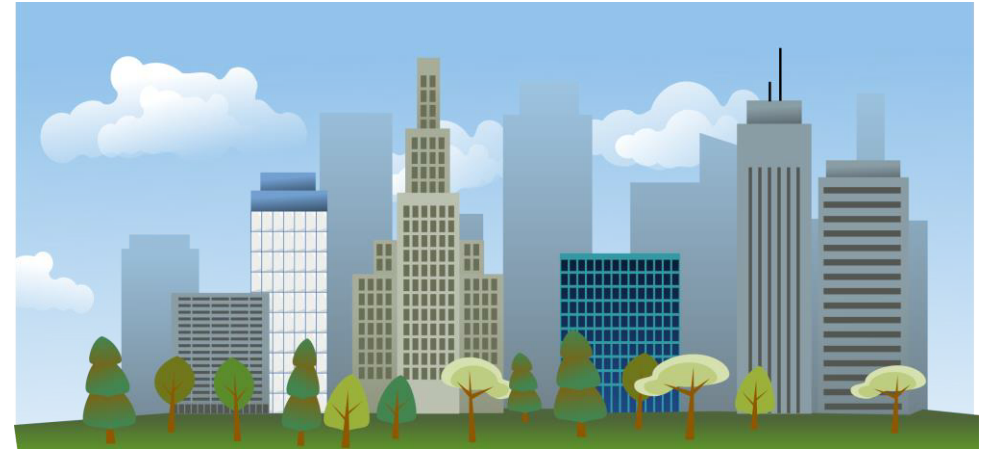
Type 2 Diabetes

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- Historically child-onset diabetes
 - Primarily Genetic and auto-immune origin
 - Requires insulin treatment
 - Co-morbidities with uncontrolled management

- Historically adult-onset diabetes
- Genetic and auto-immune components, but primarily environmental origin
- Various risk factors
- Can be tolerated without insulin treatment for some time
- Co-morbidities with uncontrolled management



Vs.



In rural areas:



Access to care

+



Risk Factors

+



Awareness of Diabetes &
Diabetes Management

=



Prevalence of Diabetes

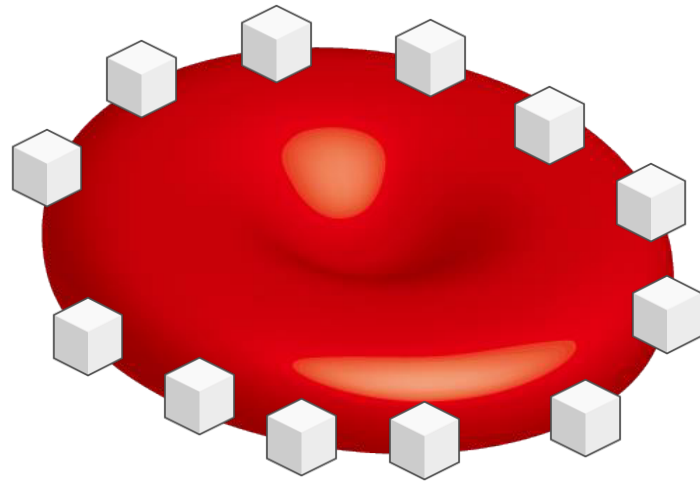


12.4% prevalence
of Diabetes



14.5% prevalence
of Diabetes

Diabetes Management: HbA1c blood test



Diabetic Red Blood Cell

Normal individuals, HbA1c= <6.5%
Diabetic, HbA1c= >6.5%

- Glycated hemoglobin is affected by concentration of sugars in the blood
- Red blood cells have a life time of 120 days, or 3 months
- Canadian guidelines suggest an A1c blood test every 3 months for best Diabetes Management

Past Research

- Physician billing codes for small financial incentives with goal to increase in Diabetes care (up to \$36 a year), were ineffective in Ontario
- Small financial incentives provided to the patient, can increase adherence to exercise in both the long term and short term
- Research Question: Is there a use of small financial incentives for the patient to increase Diabetes self-management?

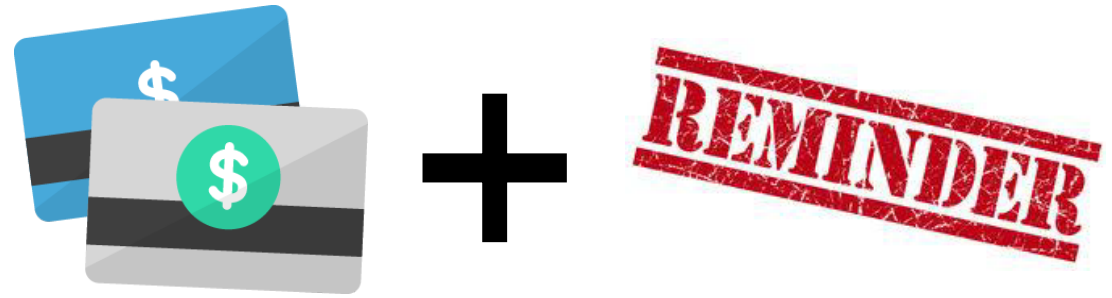
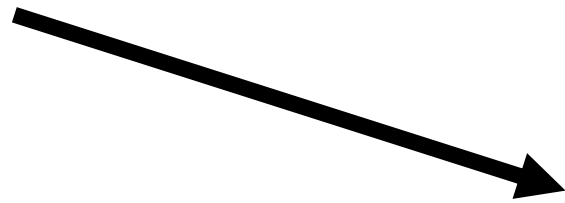
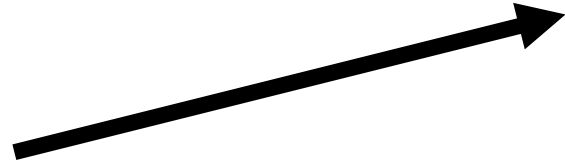
The Goal of this study

- To assess, that if small financial incentives: in the form of \$5 gift cards, can increase Diabetes Management, in rural Northwestern Ontario
- With diabetes self-management determined by the frequency of Diabetic HbA1c blood tests conducted over a 2 year period

Methods



200 Participants



100 Participants



100 Participants

Methods

- Those in the incentive group were given a choice from several locally owned, and healthy options
 - Based on research by Mitchell in 2015 which demonstrated choice was an important factor in the adherence of management, although in a cardiovascular study



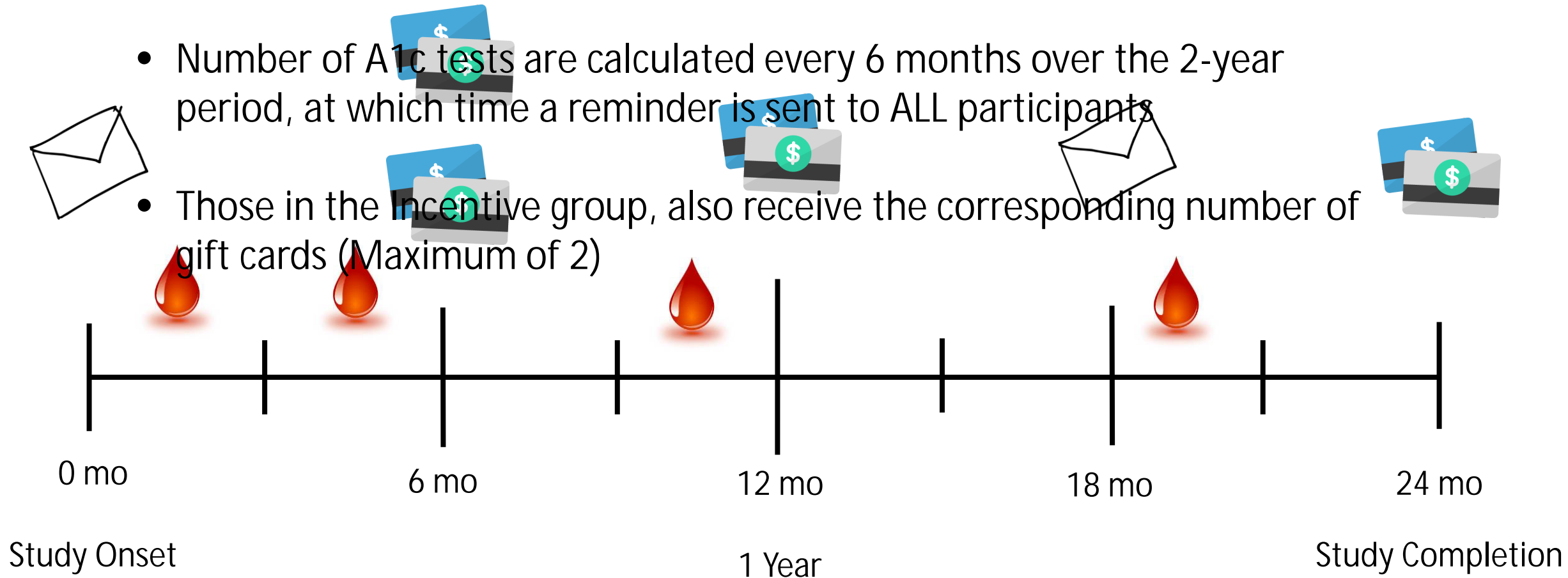
Comfort Table Bakery
(Vermillion Bay)



Methods

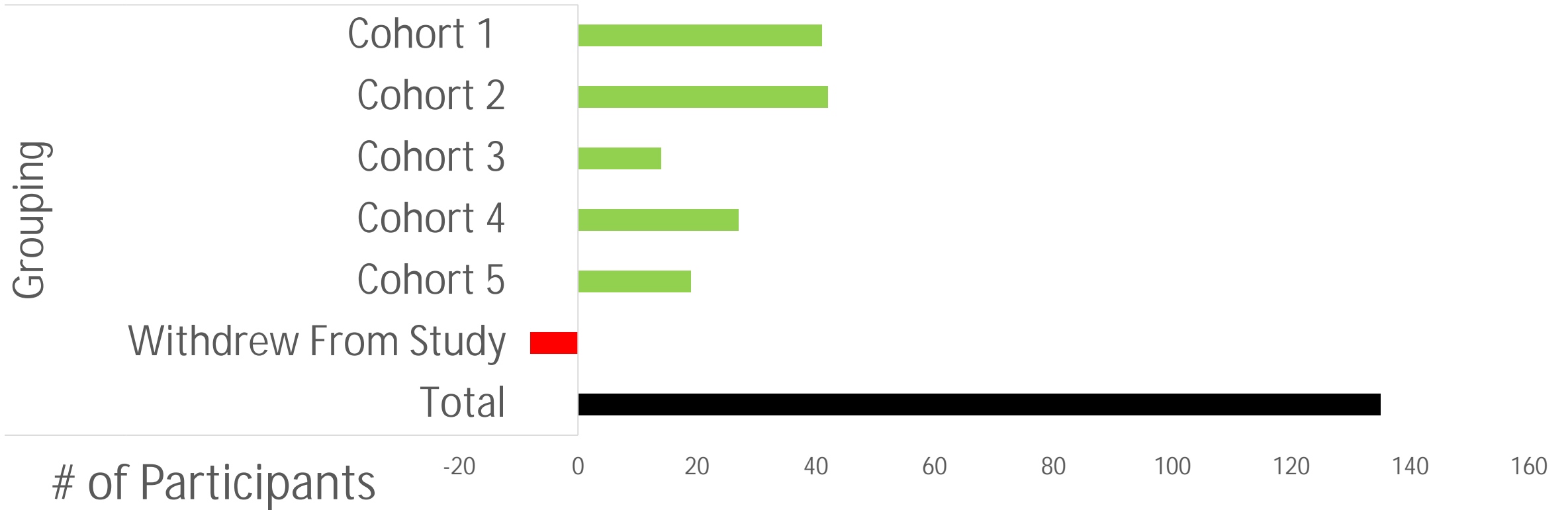
- Number of A1c tests are calculated every 6 months over the 2-year period, at which time a reminder is sent to ALL participants

- Those in the Incentive group, also receive the corresponding number of gift cards (Maximum of 2)



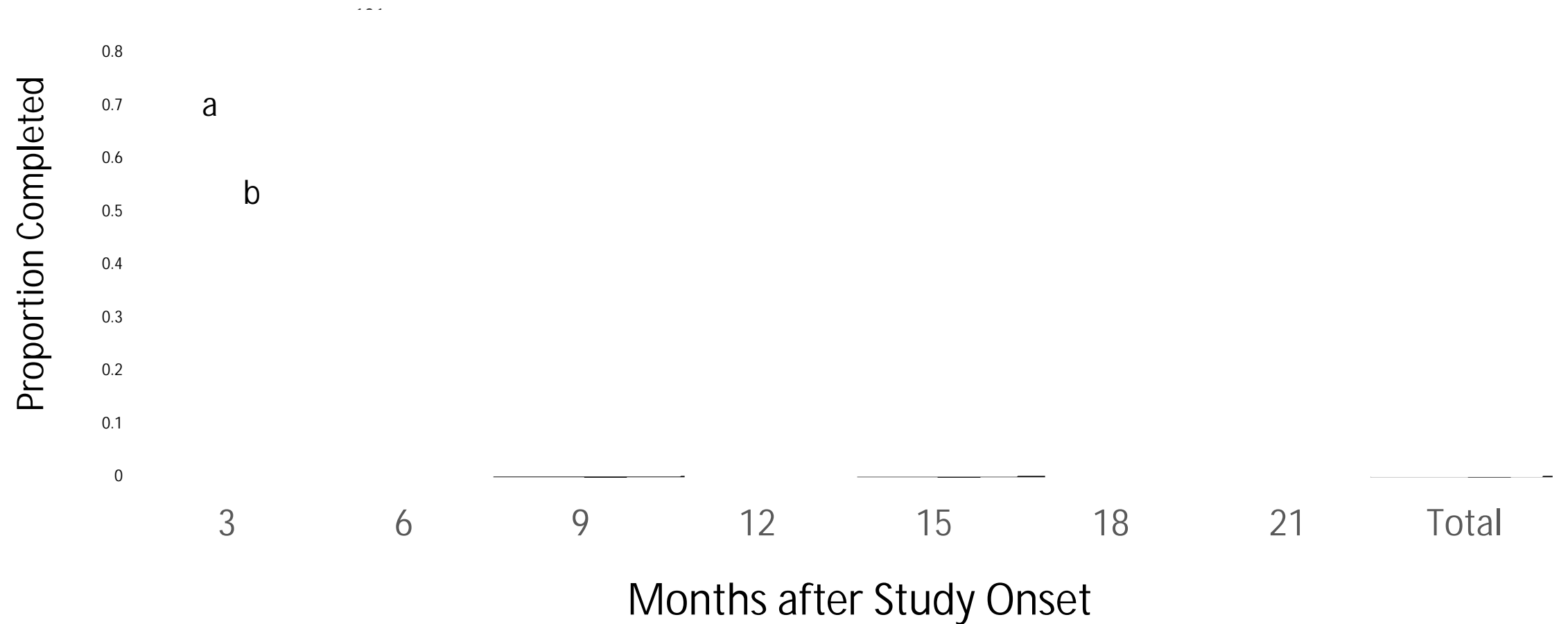
The study, so far

Recruitment over time



% of A1c completed over time

■ Incentive
□ Control



a- significantly different from b using a 95% CI

Summary of findings... so far



0-3 mo post-



3-6 mo post-



In A1c testing
adherence
(as per
guidelines)

Future steps

- Finish recruitment, with a goal of 200 participants (100 in either group), we are currently at 135 with enrolment continuing
- Publish paper following completion of the study (at least 2 years from now)

Acknowledgements

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Student Investigators:

Carly Kaus, Emilee Smith, Emily Day, Gabrielle Gagnon, Hailey Lappage, Regan Neall



Northern Ontario
School of Medicine

Machin
Medical Clinic



NORTHERN ONTARIO
ACADEMIC MEDICINE
ASSOCIATION



Questions or Comments?

References

Supiyev A, Kossumov A, Kassenova A, Nurgozhin T, Zhumadilov Z, Peasey A, Bobak M. Diabetes prevalence, awareness and treatment and their correlates in older persons in urban and rural population in the Astana region, Kazakhstan. (2016) Diabetes Research and Clinical Practice, 112: 6-12.

Mitchell, M. Financial Health Incentives in Cardiac Rehabilitation. (2015). Tspace, Exercise Sciences. Retrieved from: <https://tspace.library.utoronto.ca/handle/1807/71601>

Government of Canada. Chapter 4: Diabetes in Canada: Facts and figures from a public health perspective – Type 2 diabetes. Retrieved ratchets: <https://www.canada.ca/en/public-health/services/chronic-diseases/reports-publications/diabetes/diabetes-canada-facts-figures-a-public-health-perspective/chapter-4.html>

Mitchell M, Goodman J, Alter DA, John L, Oh P, Pakosh M, Faulkner GE. Financial incentives for exercise adherence in adults: systematic review and meta-analysis. (2013). Am K Prev Med. 45(5): 658-67.

North West local Health Integration Network. Regional Diabetes Plan: Building a High Performance Diabetes Health Team (2016). Ontario.