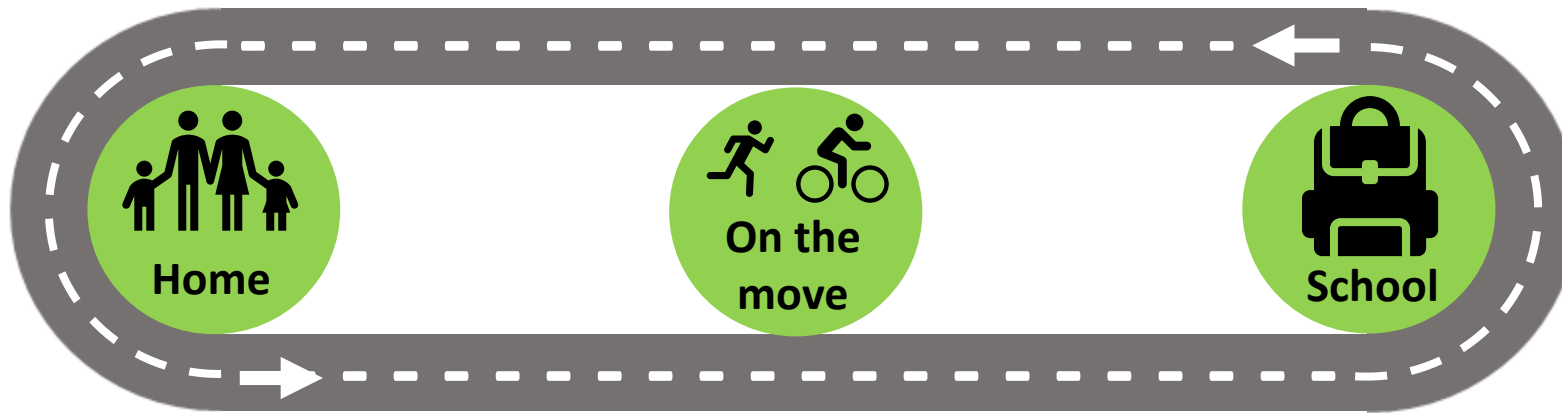




Tate Hubka, Moreno Zanotto, & Janet Aucoin
CARSP Webinar – 3 December 2018

Bicycling Injuries in Kids and the Environment (BIKE) Study: Project Update

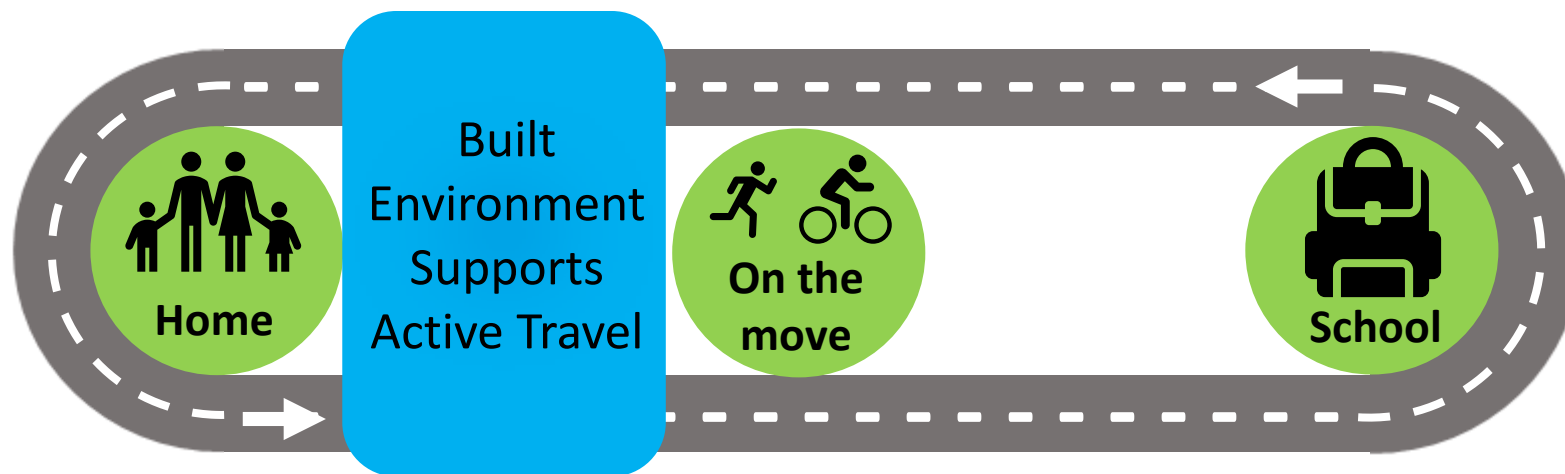


Background

Methods

Results

Conclusions



Objective 1: Increase Active Travel



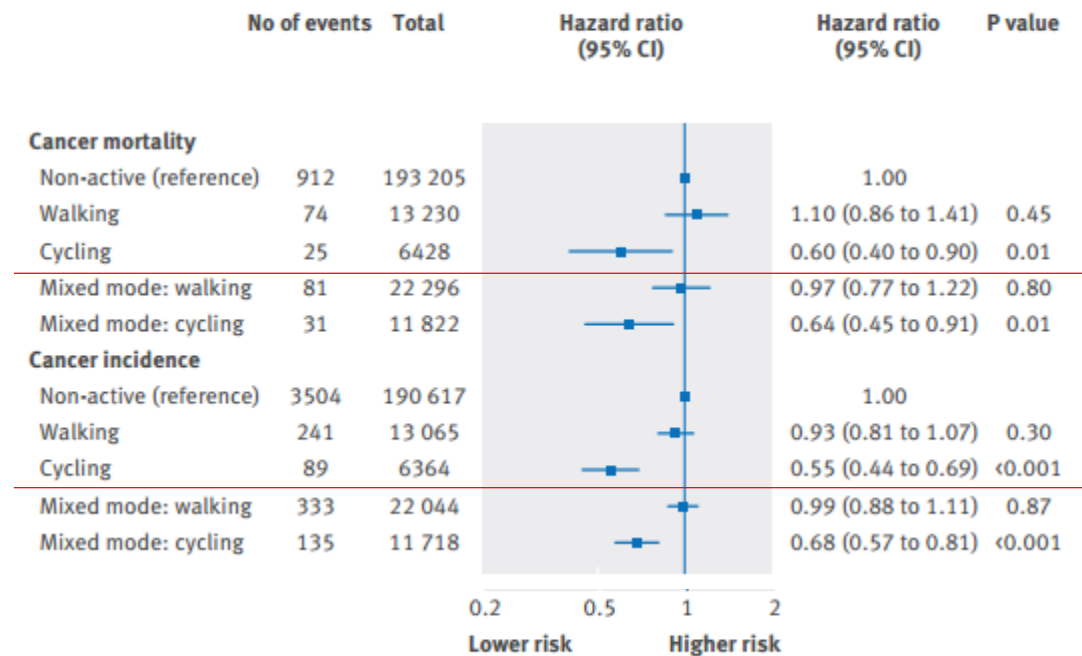
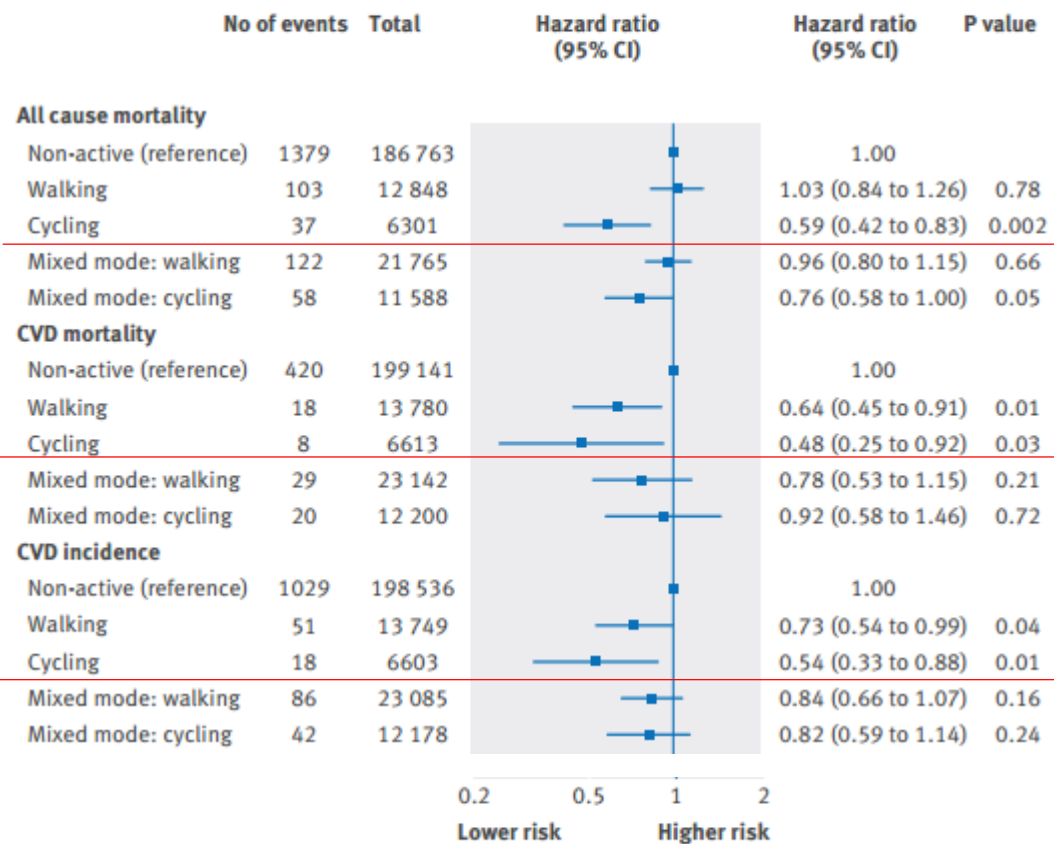
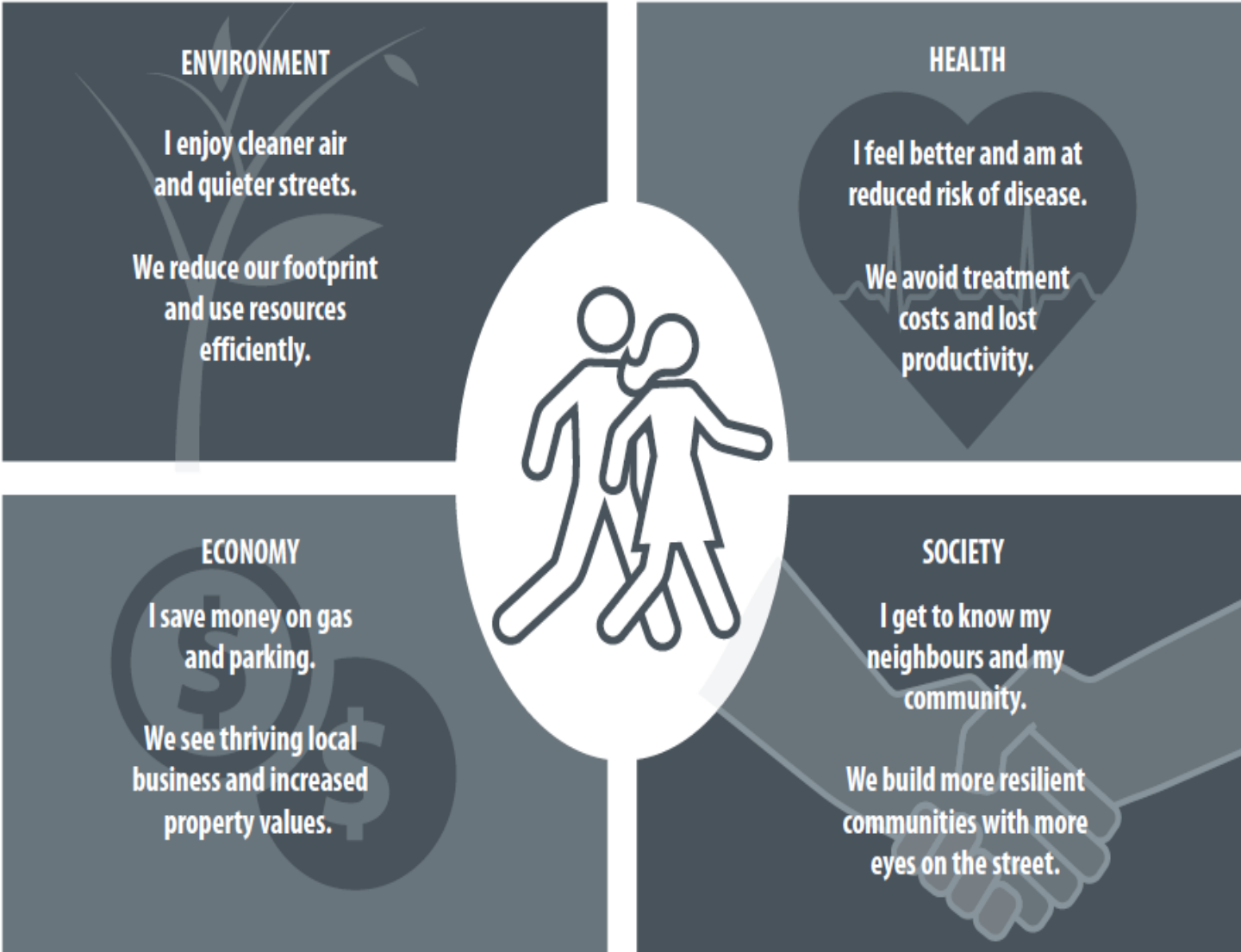
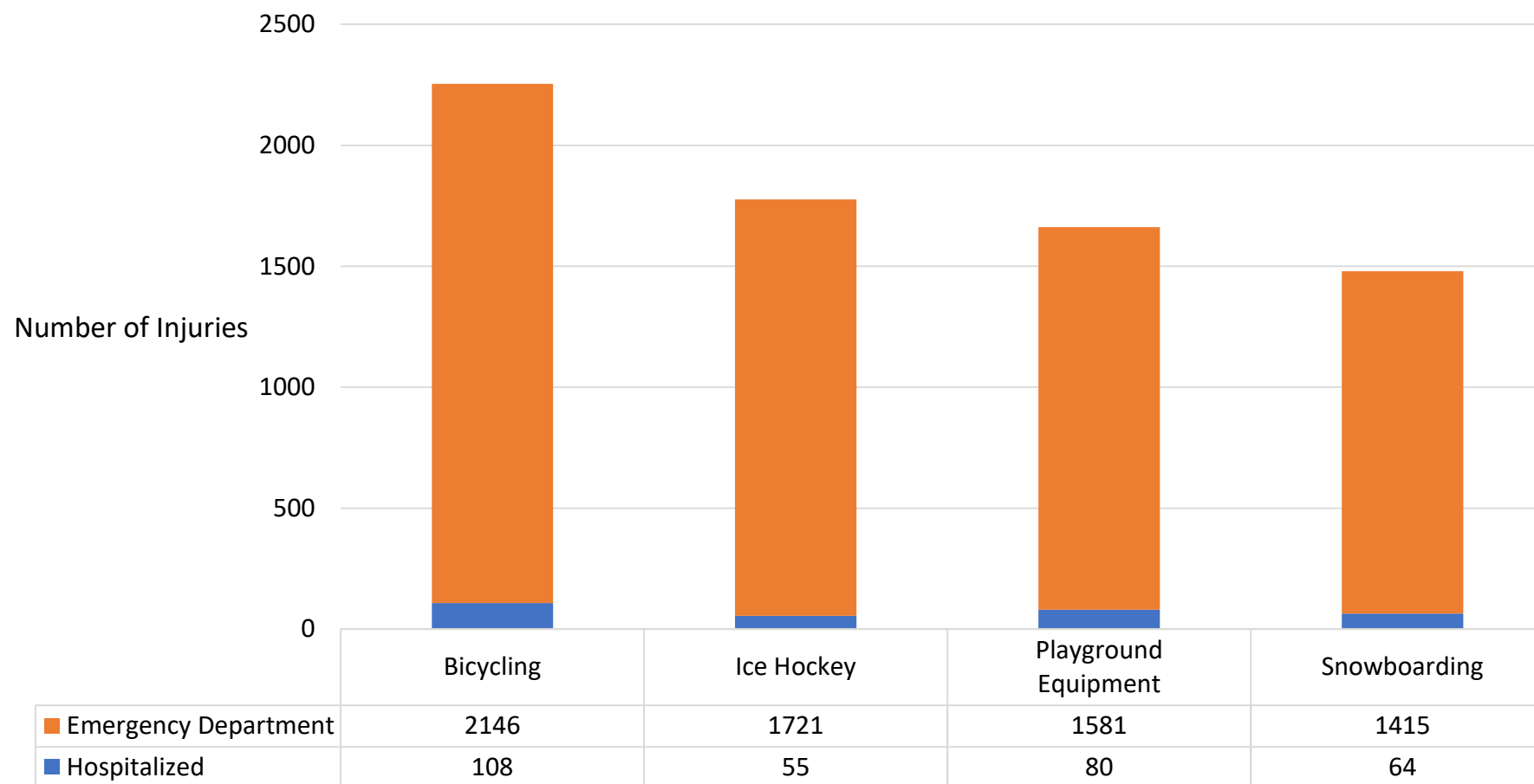


Fig 1 | Hazard ratio for all cause mortality, cardiovascular disease (CVD) incidence and mortality, and cancer incidence and mortality by commuting mode





Alberta Children's Hospital Top Sport and Recreation CHIRPP Injuries from 1999-2003



Kang J, Hagel BE, Emery CA, Meeuwisse W, Senger T. Assessing the representativeness of Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP) sport and recreational injury data in Calgary, Canada. *International Journal of Injury Control and Safety Promotion*. Available online: 27 Feb 2012, DOI:10.1080/17457300.2012.656315

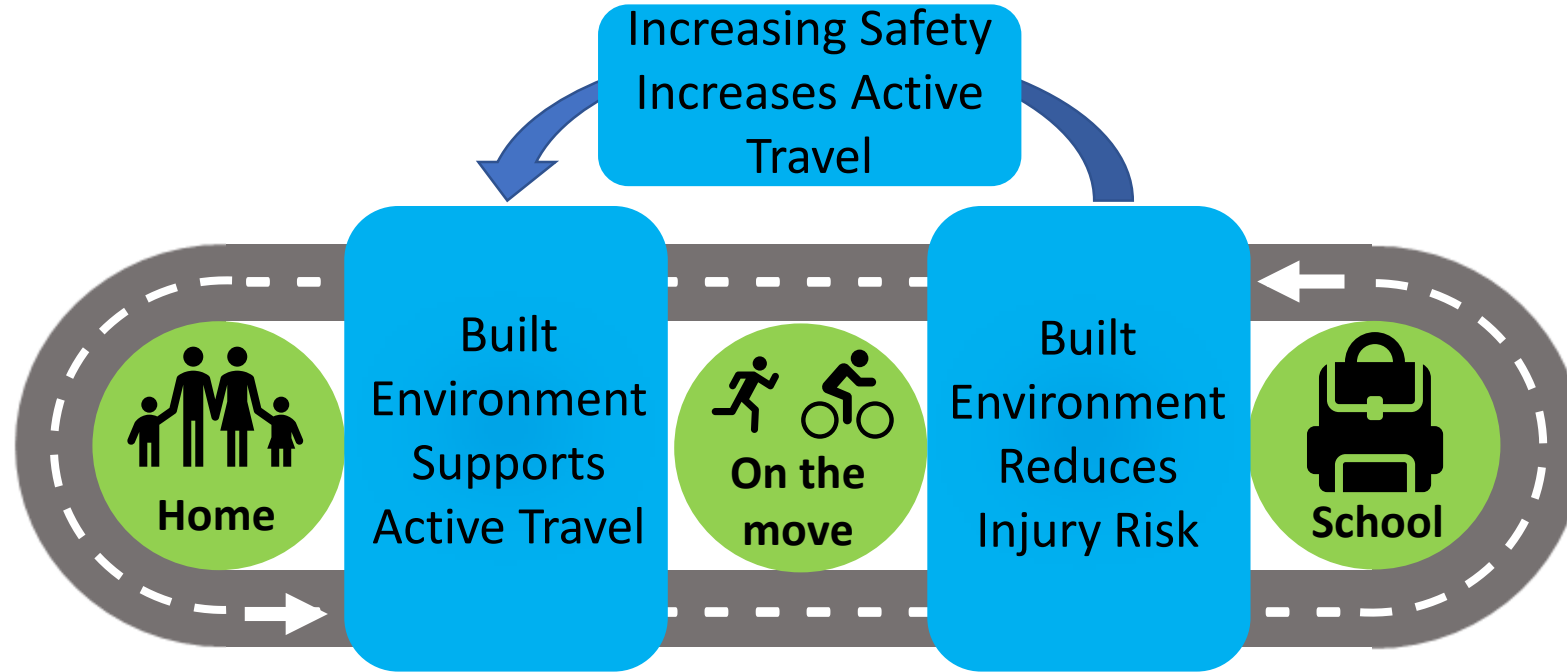


Background

Methods

Results

Conclusions



Objective 1: Increase Active Travel

Objective 2: Increase Safe Travel





Background

Methods

Results

Conclusions

<https://www.visitcalgary.com/story/10-epic-bike-pathways-in-calgary>



Background

Methods

Results

Conclusions



+



-



Background

Methods

Results

Conclusions



METHODS

Locations



Background



Methods

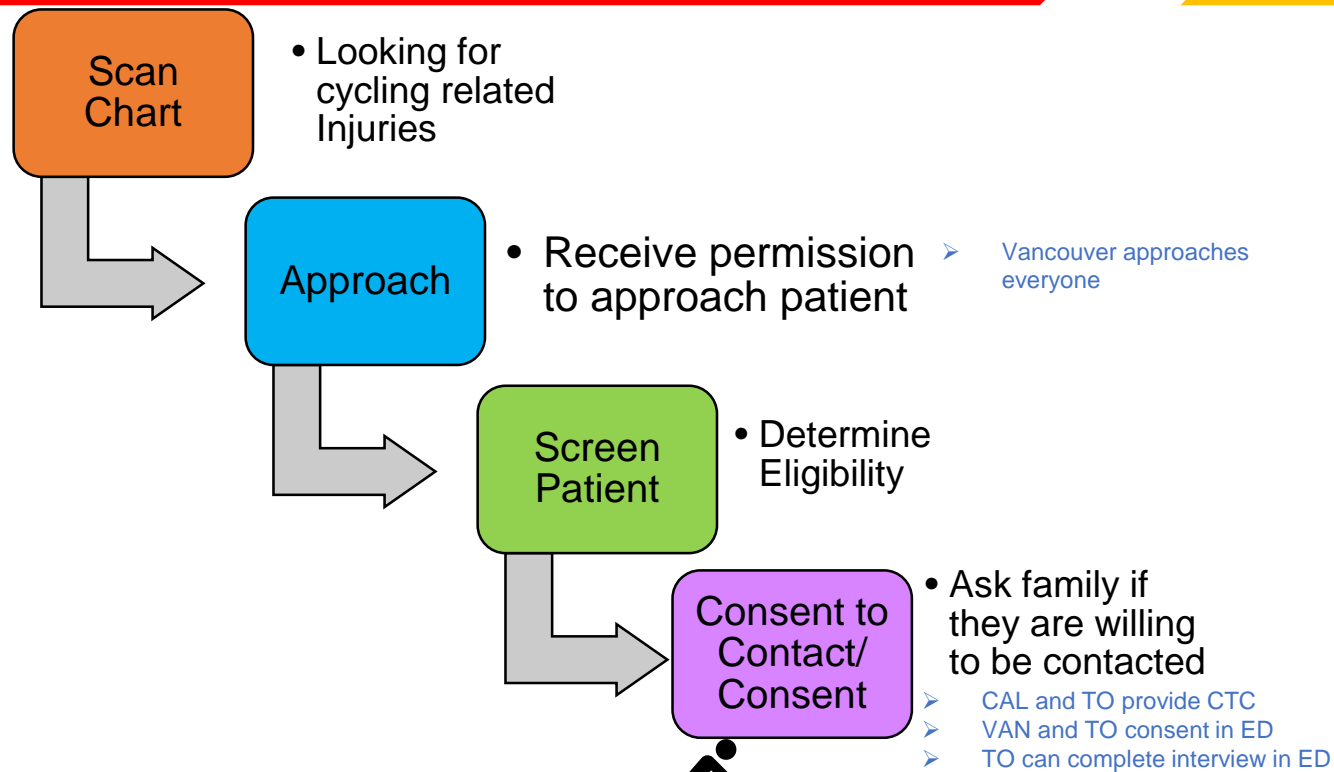
Results

Conclusions

Recruitment Procedures

Inside ED (RAs)

Outside ED (Study Personnel)

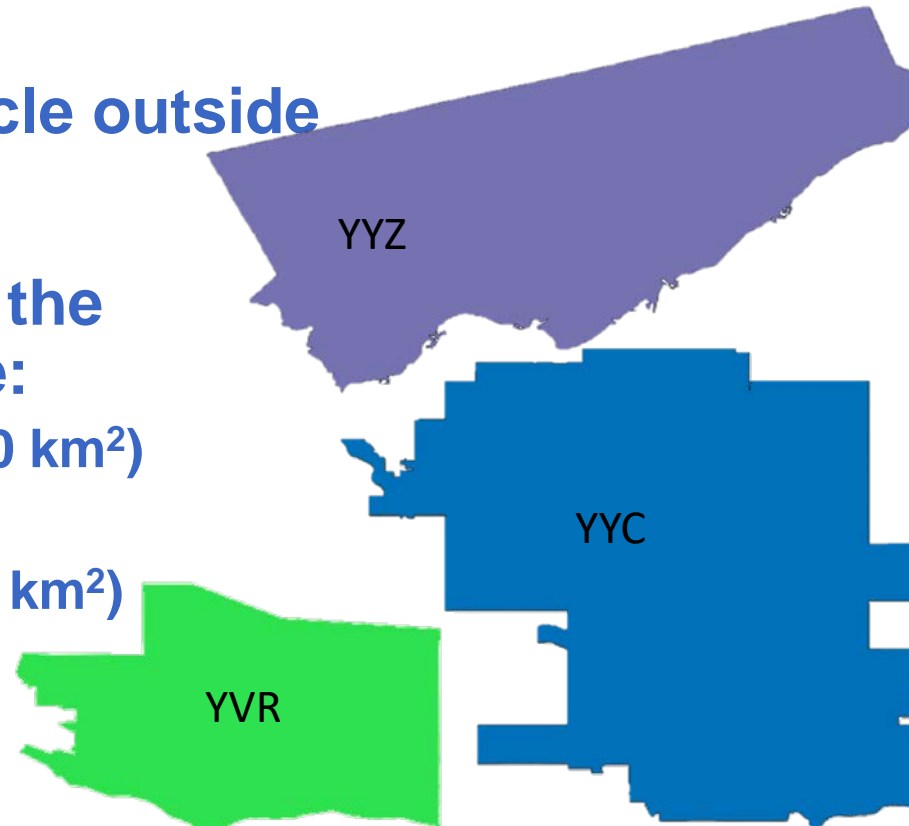


- **Contact participants to arrange in-person interview.**
- **Conduct 30 minute in-person interview at home or public venue.**
- **Conduct Site Audits along participant's bike route.**



Who Are We Looking For in the Emergency Department?

- Children and youth 5-17 years old
- Injured while riding a bicycle outside
- Living and were injured in the geographic inclusion zone:
 - Vancouver+6 (7 munis; ~620 km²)
 - Calgary (~825 km²)
 - Toronto and environs (~630 km²)



Eligibility

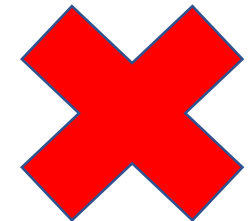
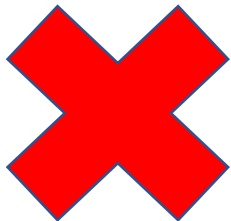
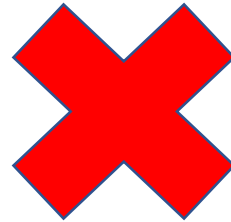
Exclusion Criteria

- No known address or phone number.
- Fatally injured.
- Patient unable to communicate due to injury and lack of parental knowledge about route/crash details.
- Patient does not speak English and neither do parents.
- Patient injured on private property.
- Patient injured while trick riding, mountain biking, racing or riding in a mass cycling event (race).
- Patient was riding a motorized bike, unicycle, tricycle, or tandem bike.

Previously enrolled
in study

Present to ED 90 days
or more post injury

Eligibility



Background

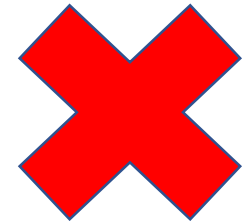
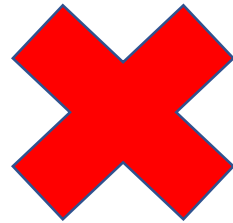
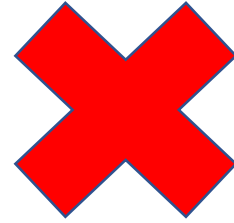
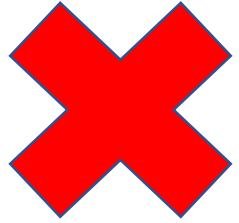


Methods

Results

Conclusions

Eligibility



Background



Methods

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Conclusions

Eligibility

Bicycle Types



Hybrid Bike



Folding Bike



Racing Bike



Cruiser Bike



Mountain Bike



Recumbent Bike



City Bike



E-bike
Pedal assisted cycle



Touring Bike



Strider Bike



Child's Bike with training wheels



Child's Bike

Screening and Enrolment



Ineligible

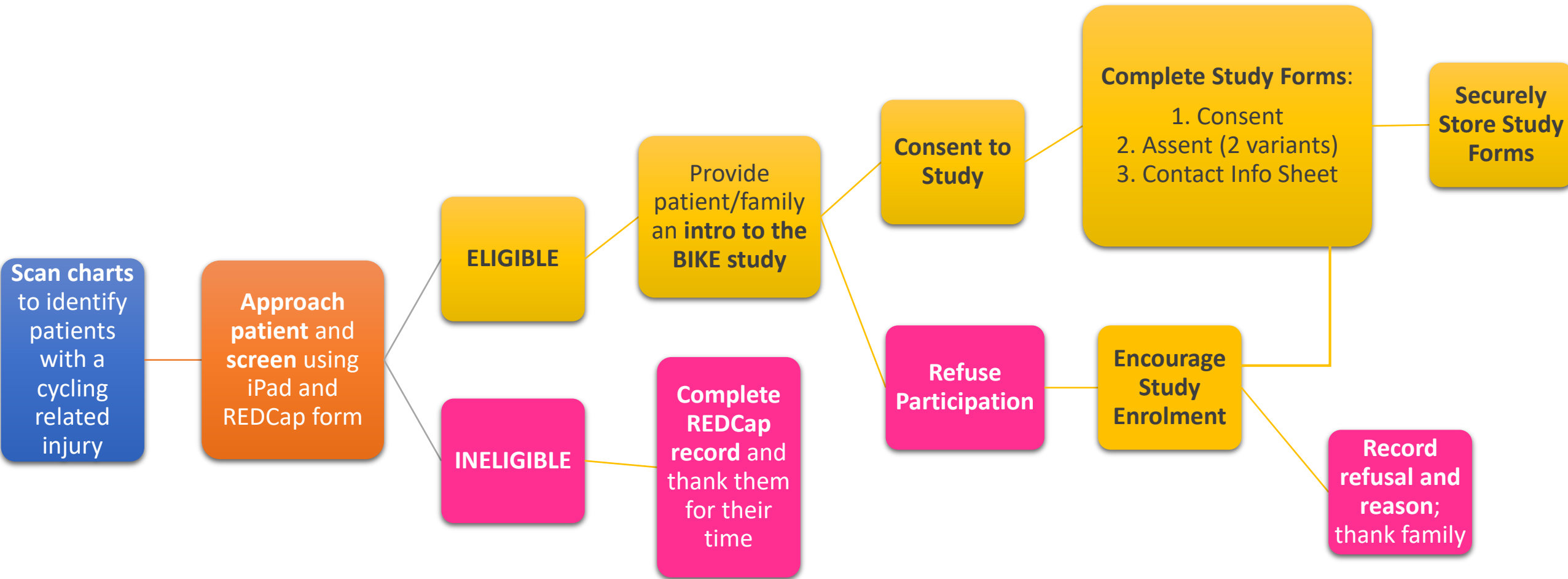
- If they are not eligible, thank the family for their time.
- Complete and save REDCap record
 - No further action required.



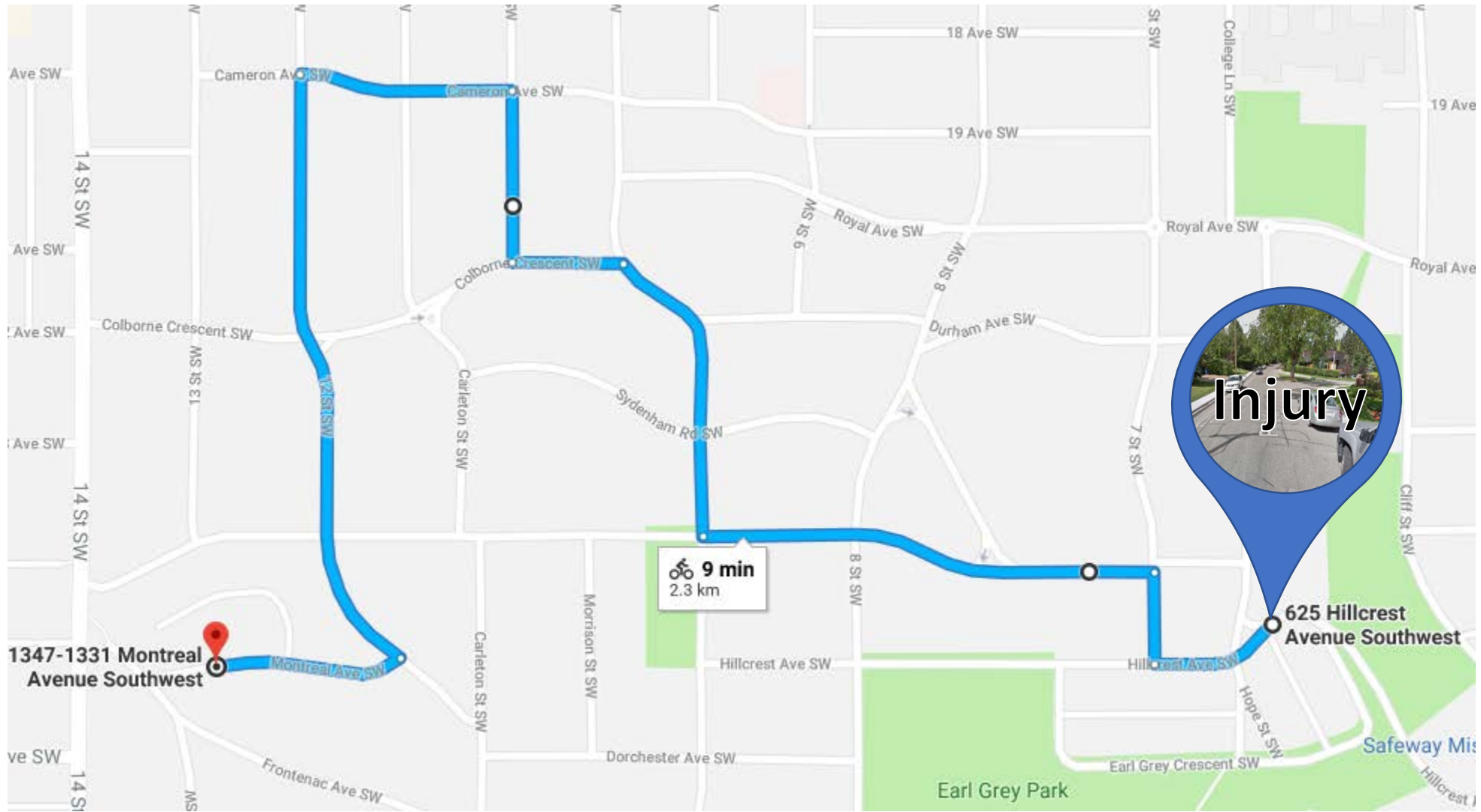
Eligible

- Provide intro to study
- Describe interview
- Complete consent/CTC

Screening and Enrolment Sequence



Case-Crossover



Background

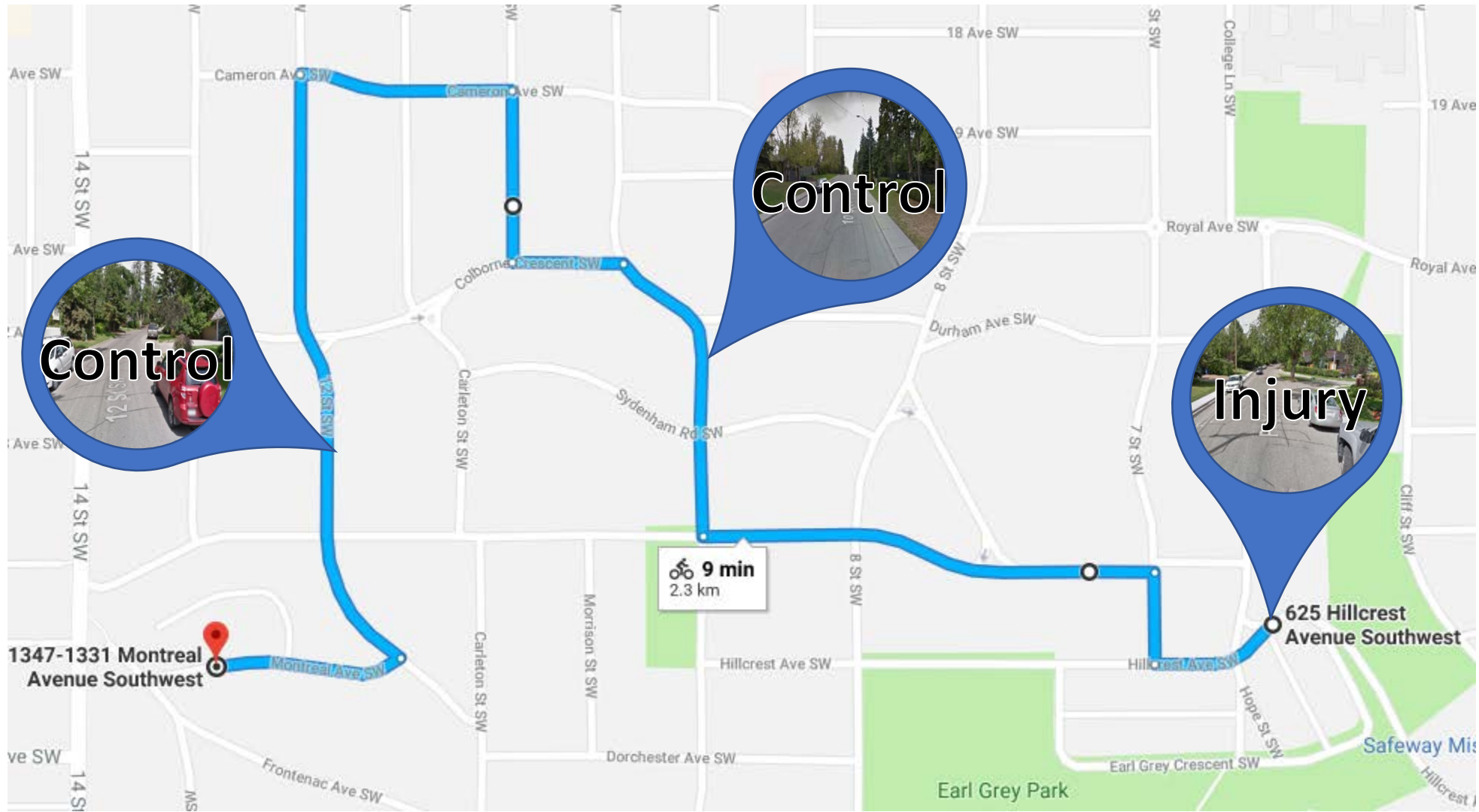


Methods

Results

Conclusions

Site Selection



Background



Methods

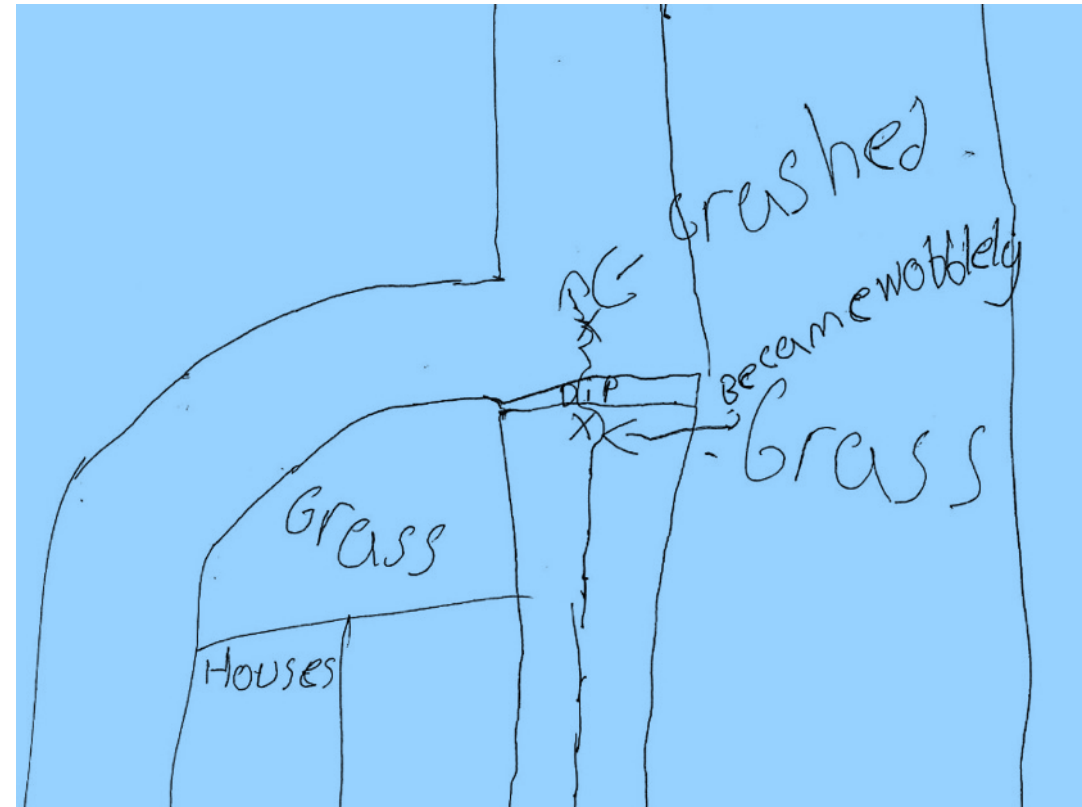
Results

Conclusions

Interview



- 30-45 minute semi structured interviews
- Questionnaire with some open ended questions
- Information on injury circumstances, cycling route, perceived safety at locations along their route, and personal information related to cycling experience.



Site Audits



An example of a cyclist's injury site

An example of a random control site

An example of a matched site

Background



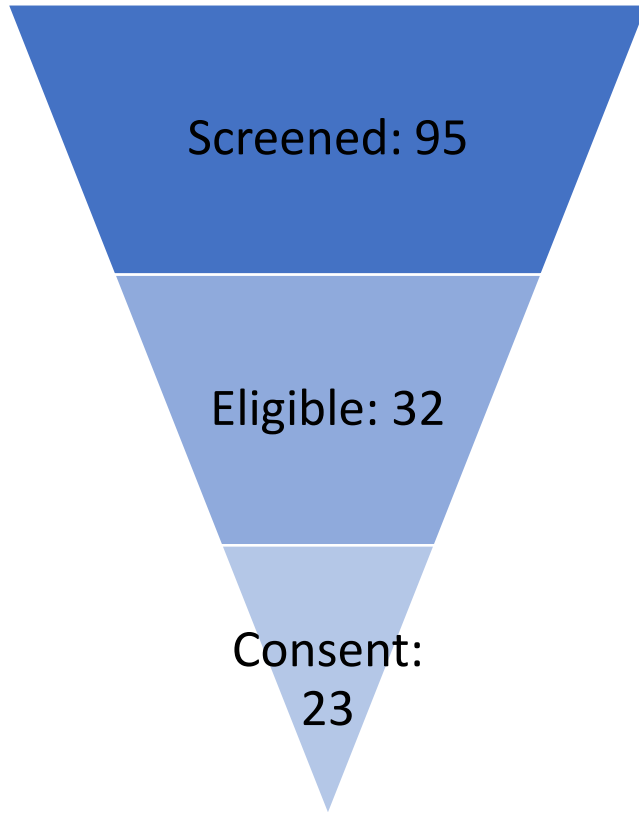
Methods

Results

Conclusions

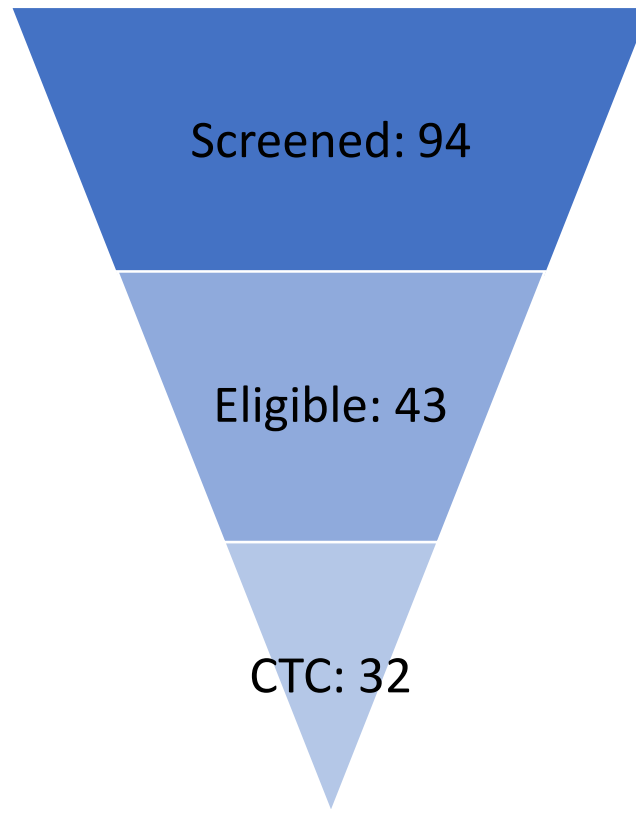
Participants

Vancouver



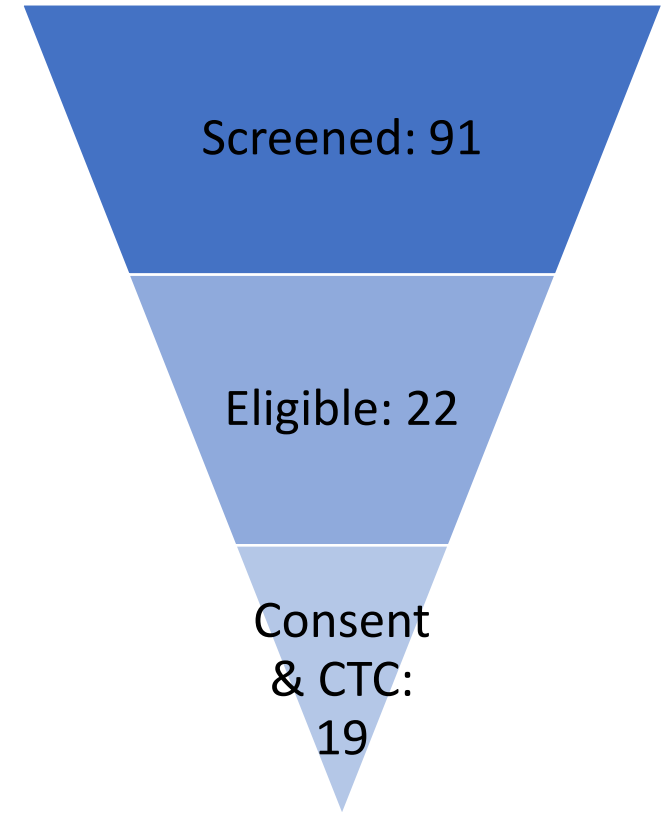
Interviewed: 15

Calgary



Interviewed: 17

Toronto



Interviewed: 15

Background



Methods

Results

Conclusions

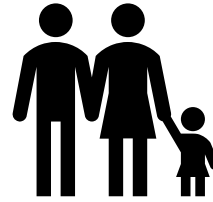


RESULTS

Sample



54% Male



Age range 5-16
(Median: 10)



Average Distance:
1231 m (1 - 16 963 m)

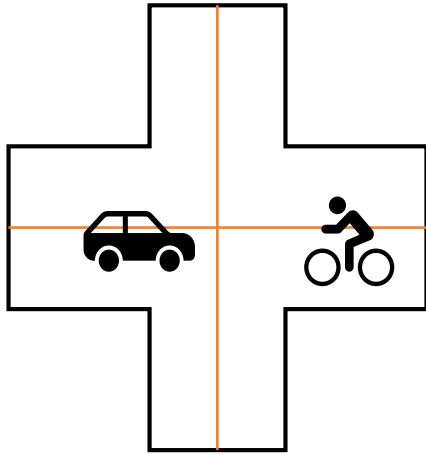


55% Involved in
a collision



Upper extremity,
minor injuries

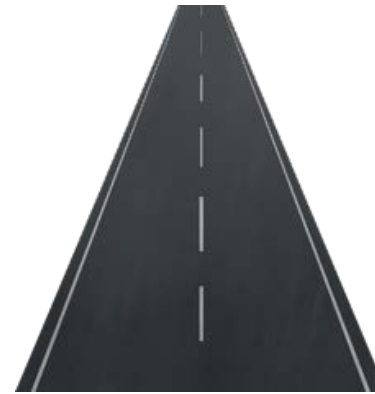
Injury Site



21% Injured at
an Intersection



55% Involved in
a Collision



36% Injured on a
road



34% Injured
away from road

Qualitative Findings

Participant: Since it was downhill it was like faster and I wanted to go ahead of my friend because I like going downhill because it's fun. But I was going really fast. Like, faster than ever and got scared.



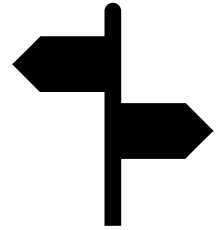
Participant: [What's dangerous was] sometimes the cars don't completely look. So they kind of come out really fast.

Parent: There's the tree that juts out [...] you can see how far it came out. There wasn't much room to skootch by.

Participant: When we did meet a car it was dangerous because [...] there was only room for cars, and not for bikes and cars to be there together.



Qualitative Themes



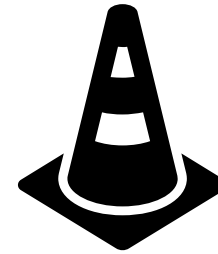
Design



Surface



Grade



Obstructions



Debris



Motor Vehicles



Other Cyclists



Pedestrians





CONCLUSIONS

Next Steps

- Compare the data collected for the injury and two control sites
- Classify route types into categories (roadway, off-road, intersection)
- Personal characteristics will be compared by sex and age groups
- Examine the route characteristics and their links to bicycling injury



Enhanced Participation Plan

BIKE Study (CHASE Project 2D)

Participation Enhancement Plan

Vancouver (BCCH)

- Expanded Geographic Zone
- Shadow ED Team
- Extend Data Collection

Calgary (ACH)

- Incentives for ED Team
- Shadow ED Team
- Extend Data Collection
- Incentive for BIKE Participants
- Winter Suspension

Toronto (SickKids)

- Shadow ED Team
- Extend Data Collection
- Incentive for BIKE Participants
- Winter Suspension





Thank
YOU

**\$5 AMAZON.CA
eGIFT CARD**

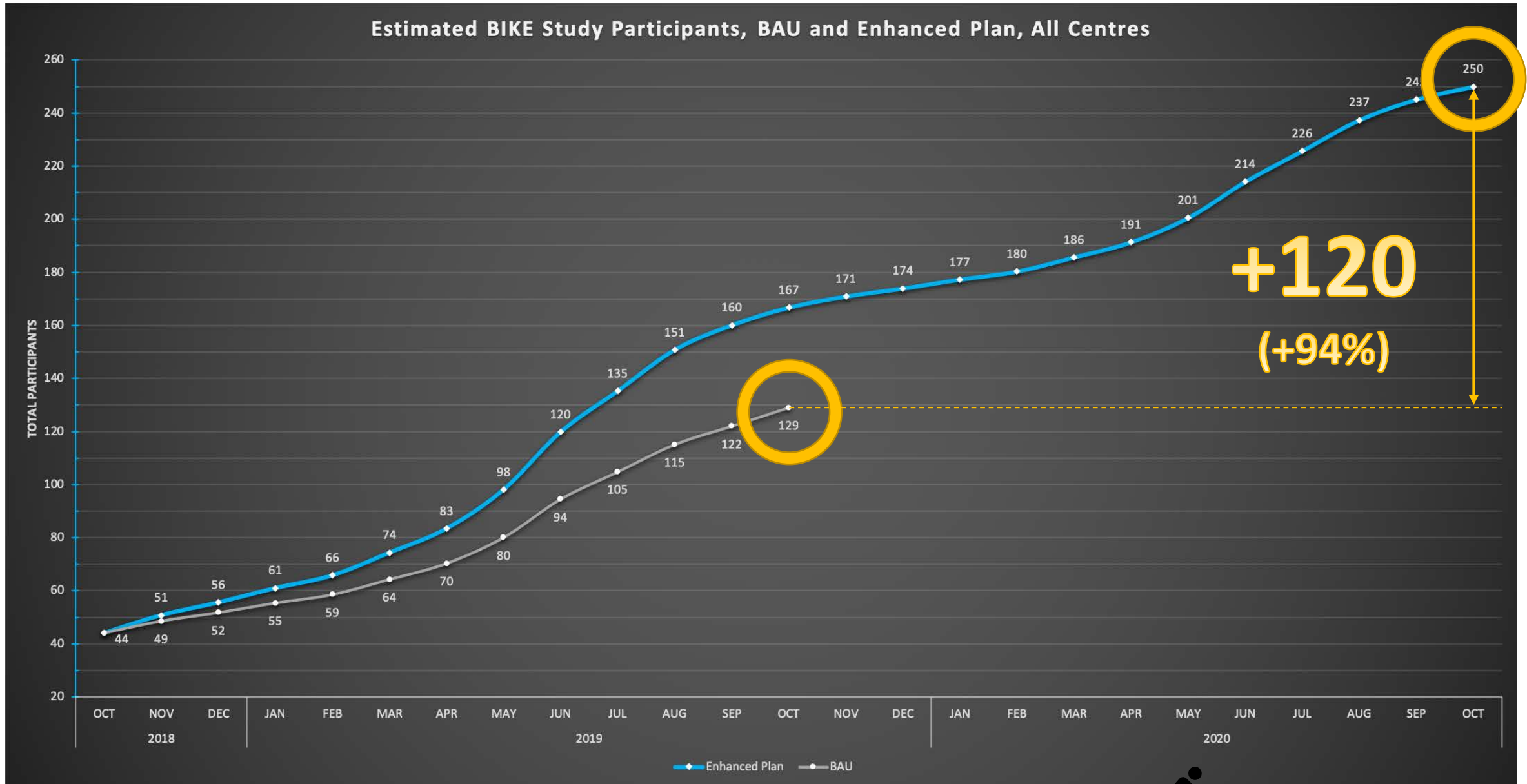
**PARTICIPATION
GIFT**

OR

**NEON
HI-VIS
SLAP BANDS**
(Set of 2)



Study Participation



Background

Methods

Results



Conclusions

Staff & Students

Rebecca Ling, Lambert Desrosiers-Gaudette, Tona Pitt, Madison Myers, Tammy Do, Mairead Whelan, Christian Tsang, Brooklynn Malec

Investigators

Brent Hagel, Meghan Winters, Kay Teschke, Andrew Howard, Linda Rothman, Quynh Doan, Suzanne Beno, Antonia Stang, Gavin McCormack, Alberto Nettel-Aguirre

Next Webinar: February 4th 2019

Happy Holidays!

