Cycling Safety

Injury Prevention Champion Meeting

April 29, 2015

IMPACT Safe Cycling Activities

Prevent cycling injuries and encourage cycling:

- Advocacy for policies and infrastructure to support safe cycling and active transportation
- Resources for professionals and the public reflecting current evidence
- Public awareness, education and programs to promote use of equipment and safe behaviours
- Research and program evaluation

Cycling Safety Topics

- Benefits of cycling
- Cycling injuries
- Protective factors
- Evidence-informed interventions
- Promoting equity

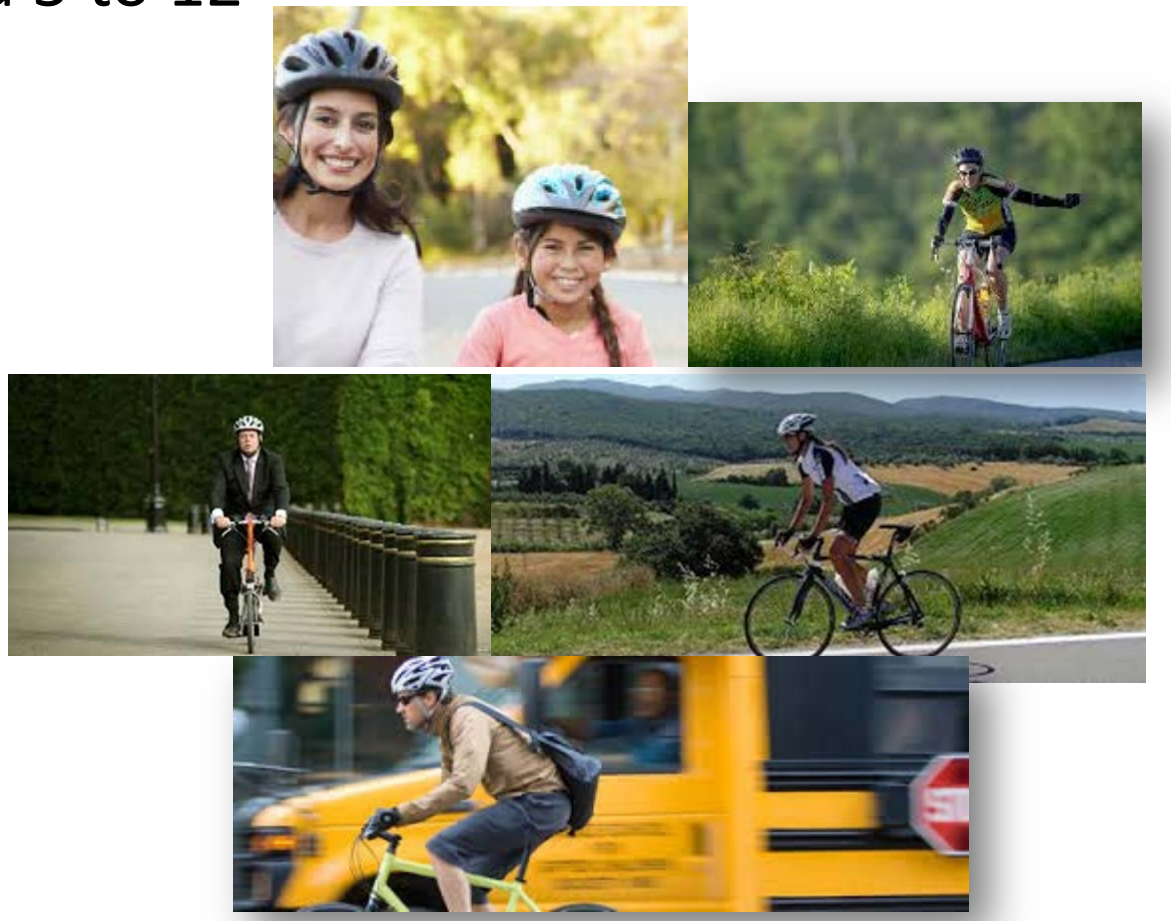
Benefits of cycling

Why cycle?

- Fun
- Healthy
- Practical and cost effective
- Good for the environment

Who Cycles?

- **90%** of children aged 5 to 12 years
- Recreational cyclists
- Sport cyclists
- Commuters
- Bicycle couriers



Burden of injury

- Cycling injuries account for half of all summer sport and recreational activity-related hospital admissions. The most common are fractures **(32%)** and head injuries **(14%)** (CIHI, 2011).

- In Canada, most **fatal bike crashes** involve motor vehicles, **82%** of cyclists hospitalized and **89%** of cyclist reporting to ED were due to **single bike crashes** (Scheppers et al, 2015).

Burden of injury

- Cycling related traumatic brain injuries could be decreased **by 63-88%** if everyone wore a helmet (Cochrane Review, 1999).

- Costs of hospitalization is **almost double** for unhelmeted cyclists ($7246.67 vs. $4328.17)(Costa et al., 2014).

About cycling data

Picture not complete:

- WHRA data report – 10 year summary of hospitalizations and deaths, not ongoing
- Several ED studies but no routine surveillance
- MPI data only includes motor vehicle collisions with cyclists that are reported to MPI

Winnipeg Data

- Each year in Winnipeg, approximately **1-2 cyclists** die and another **90** are hospitalized due to injuries, with an average length of stay of **9.2 days** (WRHA, Injury Data Report 2014)

- From 2007-2009, Winnipeg Children's Hospital Emergency Department treated an average of **103** cycling-related injuries each year. (IMPACT, 2012)

MPI Manitoba Data
Cycling Statistics 2008-2012

On average, during the period of 2008-2012:

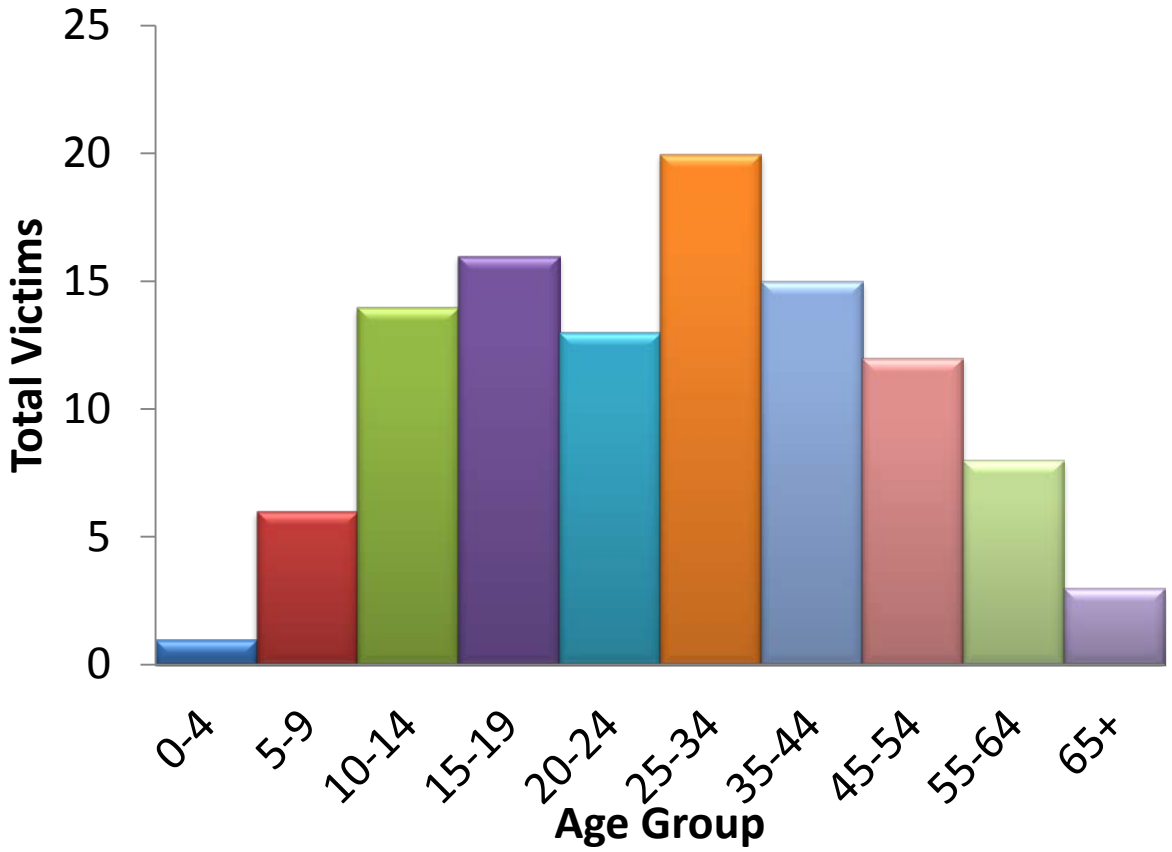
- **3** Killed per year
- **190** Injured per year
- **2.3%** of total victims

Among people killed in traffic collisions in 2013, bicyclists accounted for **5%** of total fatalities.

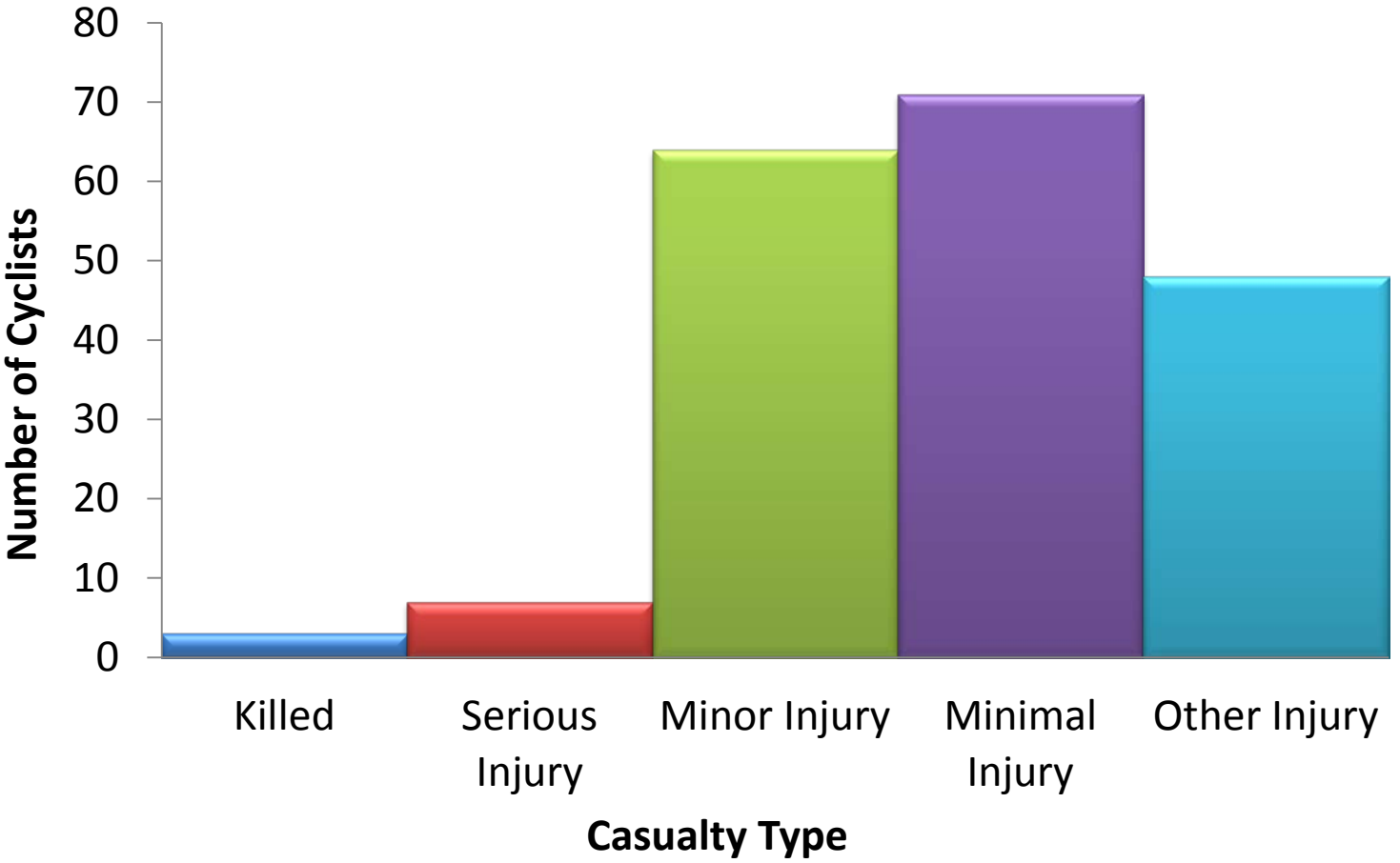
MPI Manitoba Data
Cycling Statistics 2008-2012

- Collisions involving cyclists most commonly involved males
- Majority of collisions occur in urban areas
- Most collisions occur between noon and 6pm
- Most collisions occur in the months of June, July, August

Total Victims by Age Group (Average per year: 2008-2012)



Collision Victims by Collision Type and Casualty Type: 2008-2012 Average



Collisions Involving Cyclists Most Commonly Involve

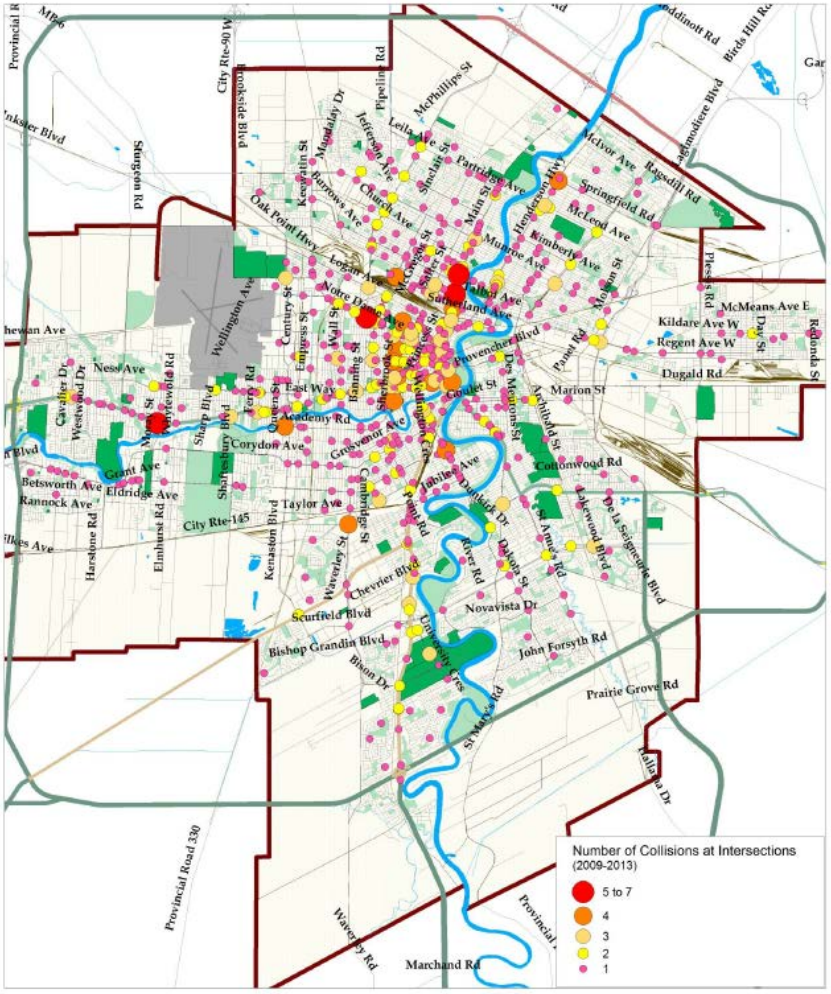
CYCLISTS THAT **DO NOT** WEAR A HELMET

70% of cyclists **INJURED** are reported to have been riding without wearing a helmet

94% of cyclists **KILLED** are reported to have been riding without wearing a helmet

Bicycle/Vehicle Collisions- Winnipeg 2009-2013

Order # 11.19 (b)
Accident Maps: Bicycle/Vehicle Collisions - Winnipeg MB (2009-2013)



Fatal Injuries

- Head injuries are the cause of **80-90%** of bicycle-related deaths (Rowe, et al 1995; College of Physicians and Surgeons of Manitoba, 1993-1999).

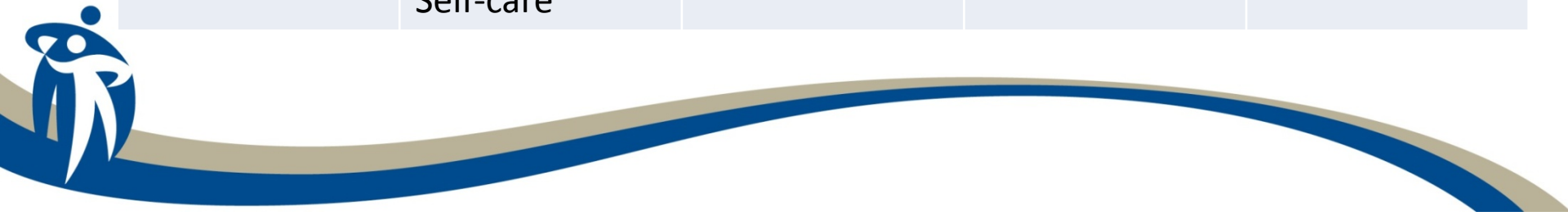
- Ontario Coroner's Report (2006-2010) detailed review of 129 deaths

Contributing Factors (Ontario)

- Males (86%), adults aged 45+ (51%)
- Summer, Peak time 8-10pm (20%) but most in daylight, dry roads, good visibility
- No helmet (73%)
- 65% urban
- Collision with motor vehicle (78%)
- Cyclist actions (71%) – inattention, failure to yield, etc.
- Cyclist distractions (15%), encumbrances (16%)
- Had been drinking/using drugs (23%)
- Driver contributing actions (62%), including speeding (30%), driver inattention (28%)

Haddon's Matrix – Interventions?

			Environment	
	Host	**Agent**	**Physical**	**Social**
Pre Event	Substance use Distractions Skill, experience Age, maturity Visibility	Bicycle fit Brakes Reflectors Type of bicycle	Loose gravel Bike lanes Weather Road conditions Speed	Laws Culture
Event	Helmet Clothing	Bicycle parts impacted	Surface landing Obstacles Traffic/speed MV involved	Helmet laws Helmet norms Incentives Fines
Post Event	Biking alone Cell phone Self-care	OnStar for bikes	Traffic (re-injury)	Care proximity 911 systems



Evidence-informed interventions

Recent and many previous studies show that cycling safety can be improved by:

- Reducing traffic speed and separating vehicles from bicycles (cycling infrastructure, traffic calming measures, speed cameras, speed zones, fines)
- Helmet promotion (community-based interventions that involve education, promotion and/or free helmets, helmet legislation) and safe cycling/driving behaviour
- Changing role of public health?

Key Safety Strategies - Infrastructure

- Reducing vehicle speed
- Traffic calming
- Separating pedestrians and cyclists from traffic
- Increasing safety at intersections

Toronto Public Health, *Road to Health: Improving Walking and Cycling in Toronto*. April *2012*

Infrastructure strategies

- Diamond lanes
- Bike lanes
- Sharrows
- Cycle Track
- Traffic calming
- Speed reduction

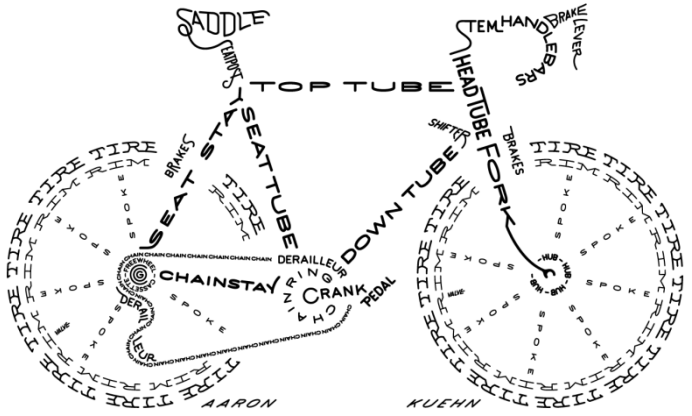
Sharing the road

- **Same Roads:** Motor vehicles and bicycles share the same roads
- **Same Rights:** Cyclists have a right to space on the road. The key is to understand your rights and follow them consistently
- **Same Rules:** Cyclists have to follow the same rules of the road as motorists including obeying all signs and traffic control devices

Source: Manitoba Public Insurance

Protective factors-personal

- Cycling skills
- Cycling behaviours
- Supervision
- Bicycle fit, maintenance
- Gear



About helmets

- Certified as a cycling helmet
- Fitted properly
- Replace after crash
- Expiry date
- Infant helmets now available

Bicycle helmet use

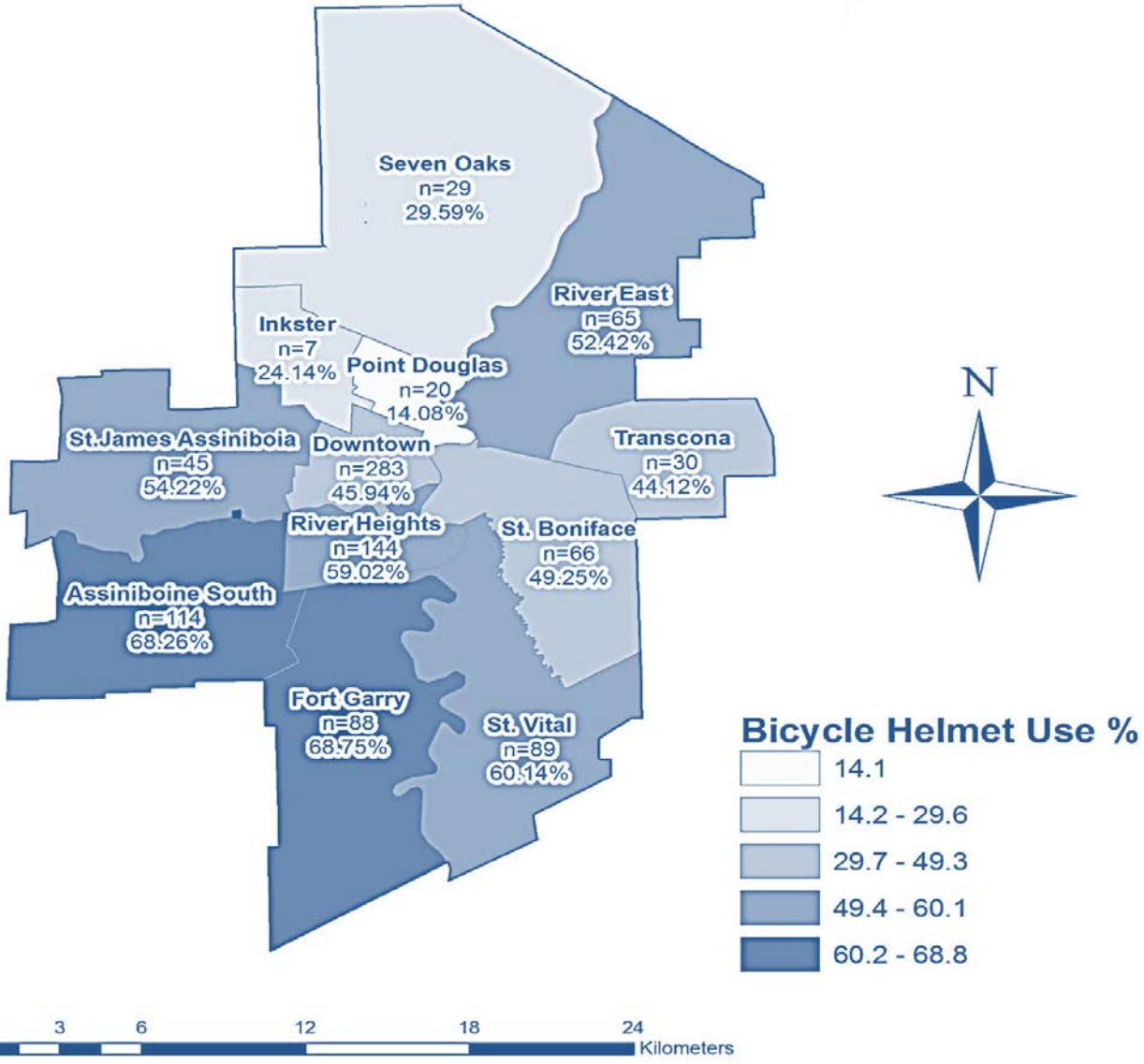
- Helmet use reduces the risk of head injury by **85%** and brain injury by **88%**
- Helmet use can be improved by:
  - Bike helmet legislation
  - Education and promotion
  - Free helmets

Bike Helmet Use by Winnipeg Community Area, 2014

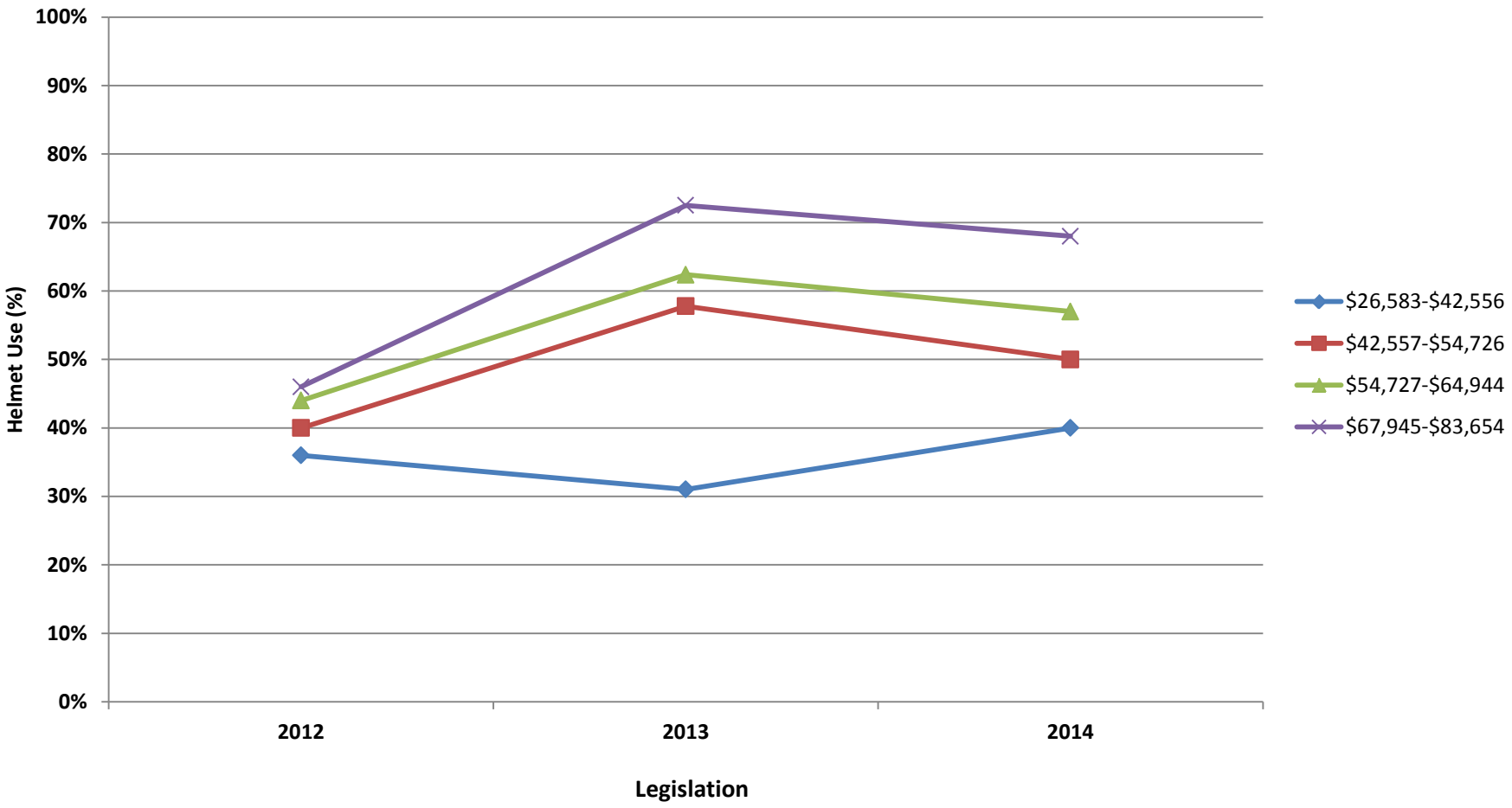
Bicycle helmet use in Winnipeg varies by community area.

Cyclists in Point Douglas had the lowest frequency of helmet use (14%).

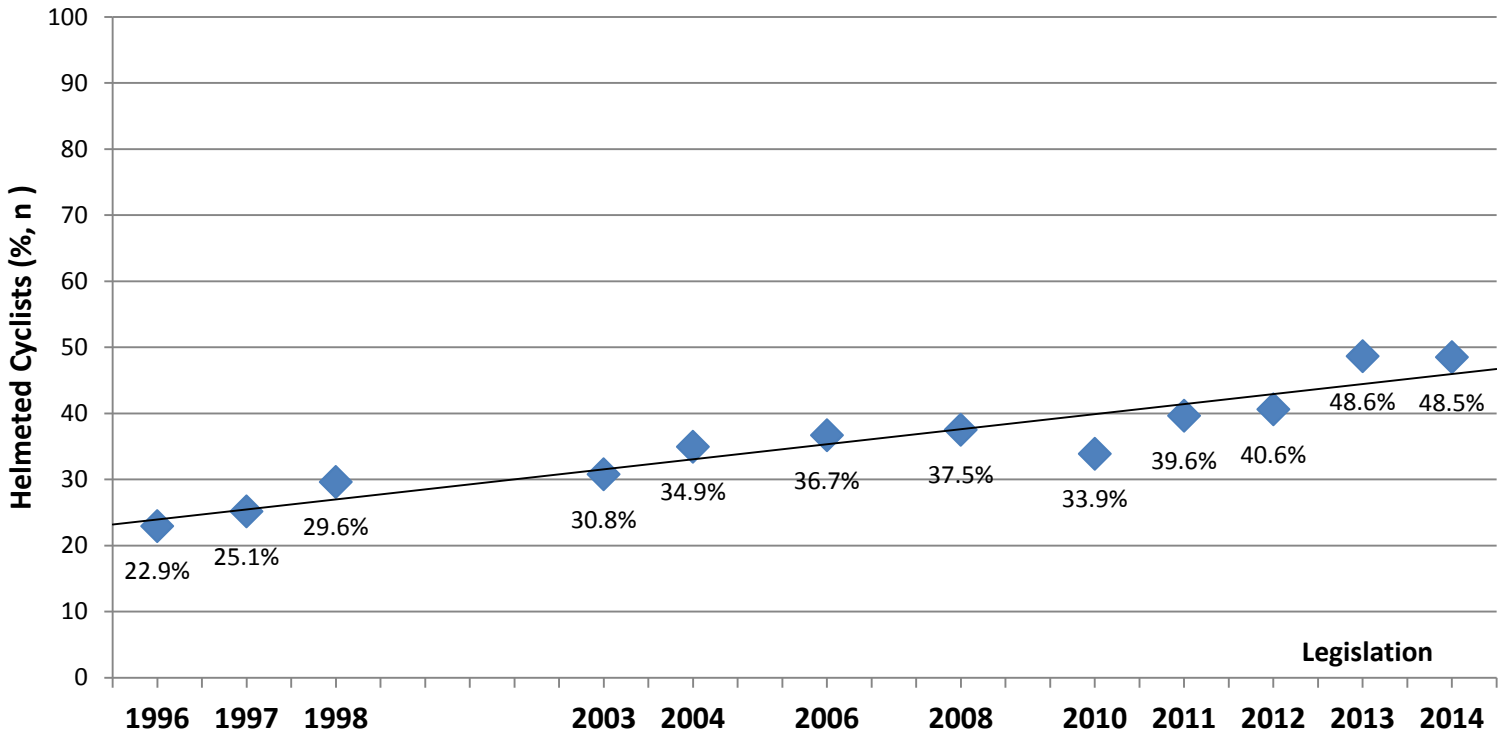
Helmet use was most often observed in Fort Garry and Assiniboine South (69% & 68%).



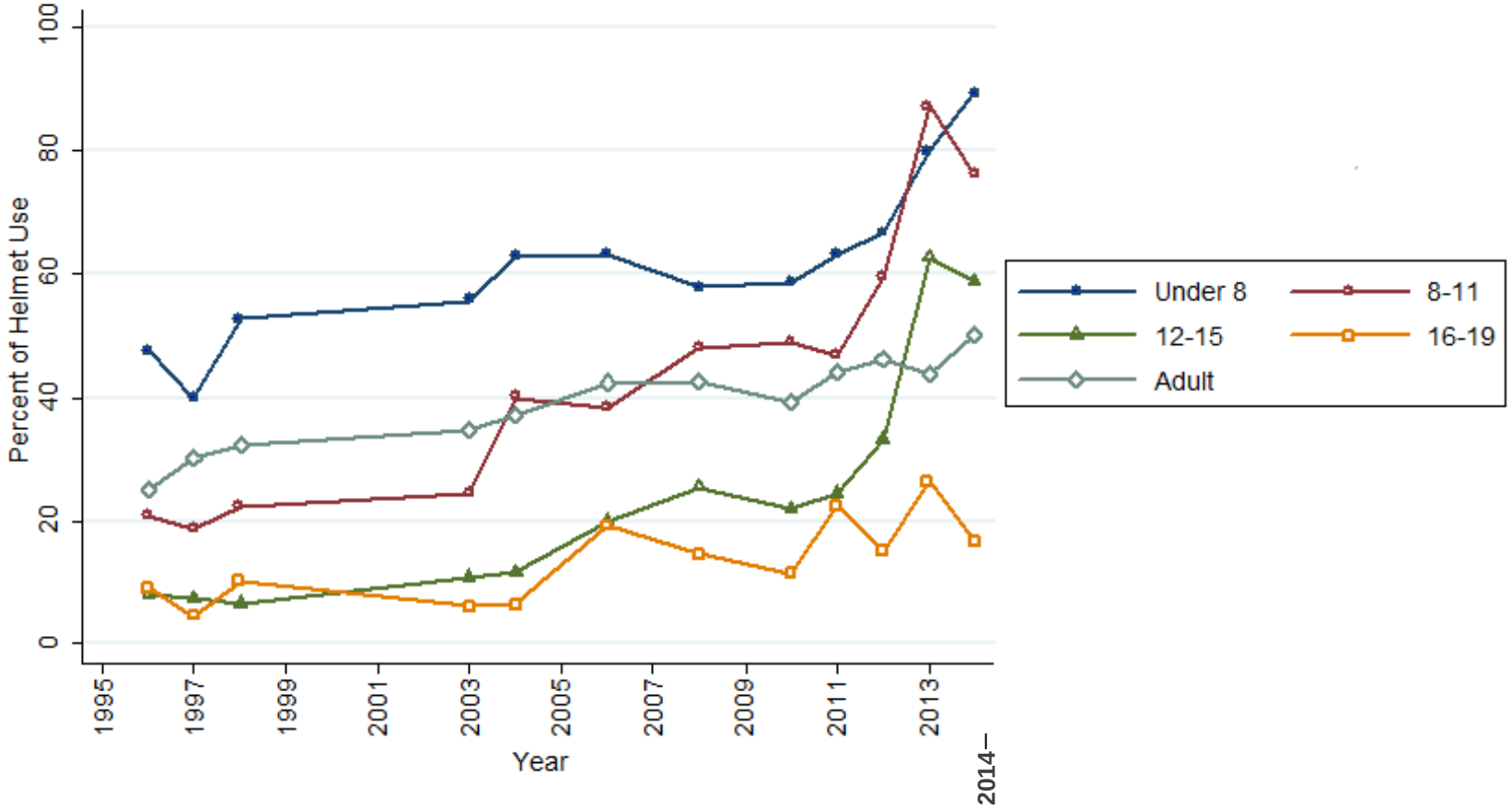
Bike Helmet Use by Median Total Family Income, 2012 - 2014



Bike Helmet Use by Year in Winnipeg, 2014



Bike Helmet Use by Age among Winnipeg Cyclists, 2014



Bike helmet legislation

- Effective May 1st 2013
- For cyclists **under 18 years of age**
- On bikes and children towed behind a bike
- Parents are responsible for children under 14
- If ticketed
  - Pay a fine of $63.10 or
  - Complete an alternate disposition if it is the person's first offence (online quiz and course/video)

Low cost or free helmets

- The Manitoba Government Low Cost Bike Helmet Initiative
- WRHA-IMPACT through Public Health Nurses and Families First Home Visitors*
- KidSport*

* Low income families, application forms available

Questions

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