Survivability Factors for Cyclists Hit by Motor Vehicles

Evidence from the Canadian National Collision Database

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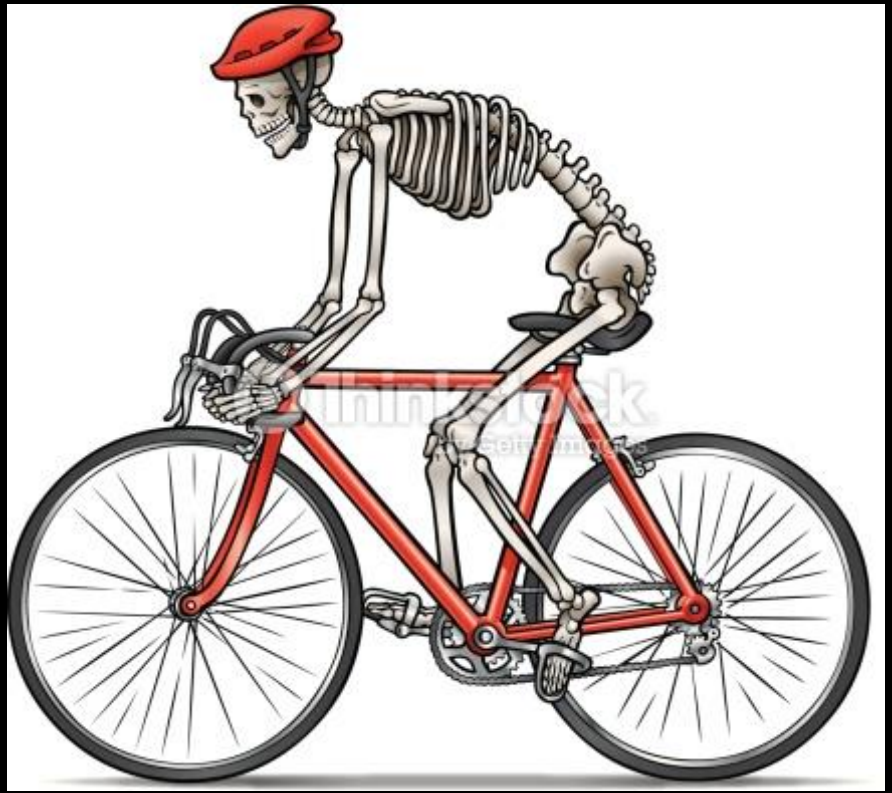
OBJECTIVES



5,860,405 NCDB records

122,907 cyclists

895 cyclist fatalities

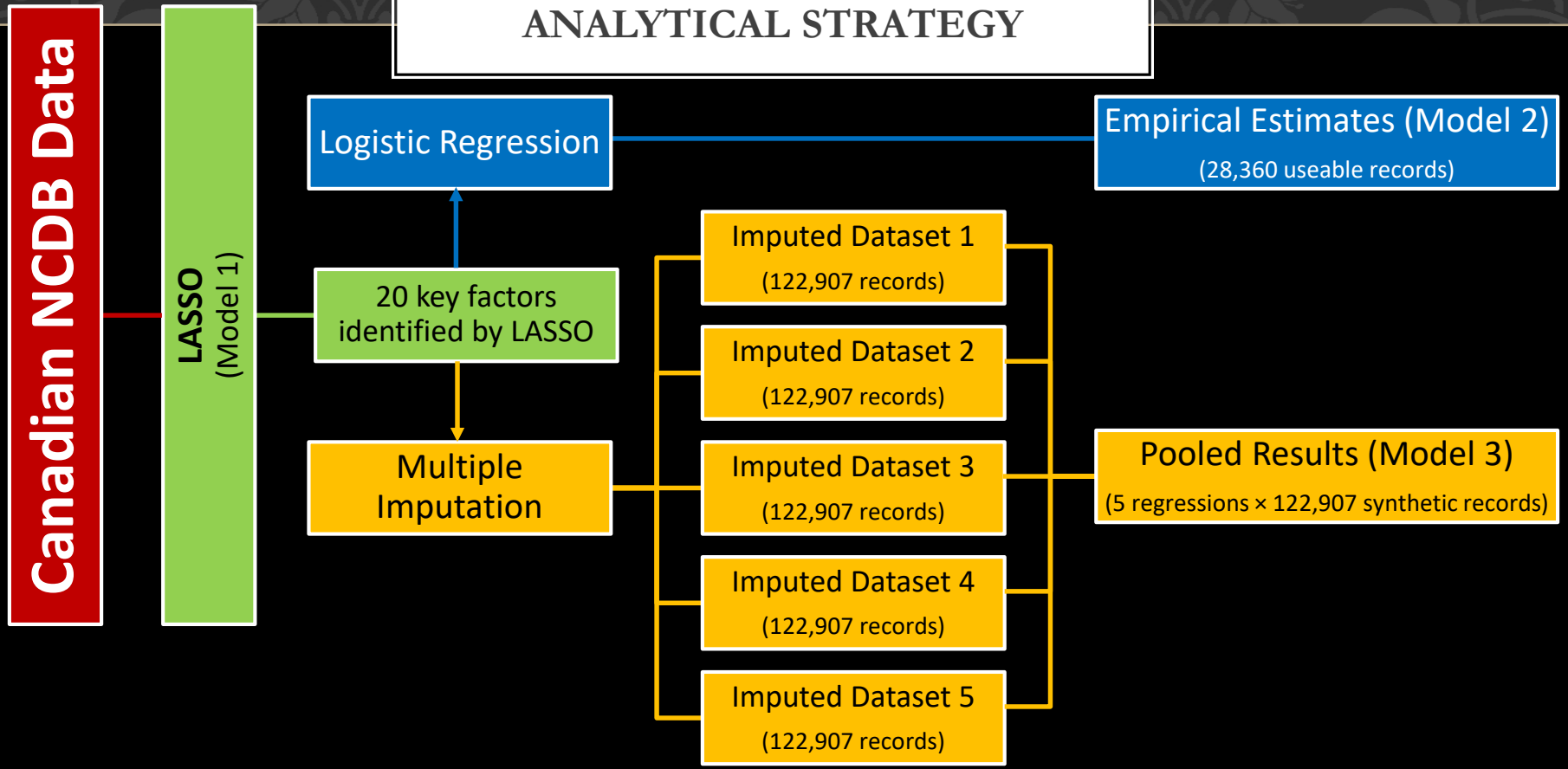
KEY FINDINGS

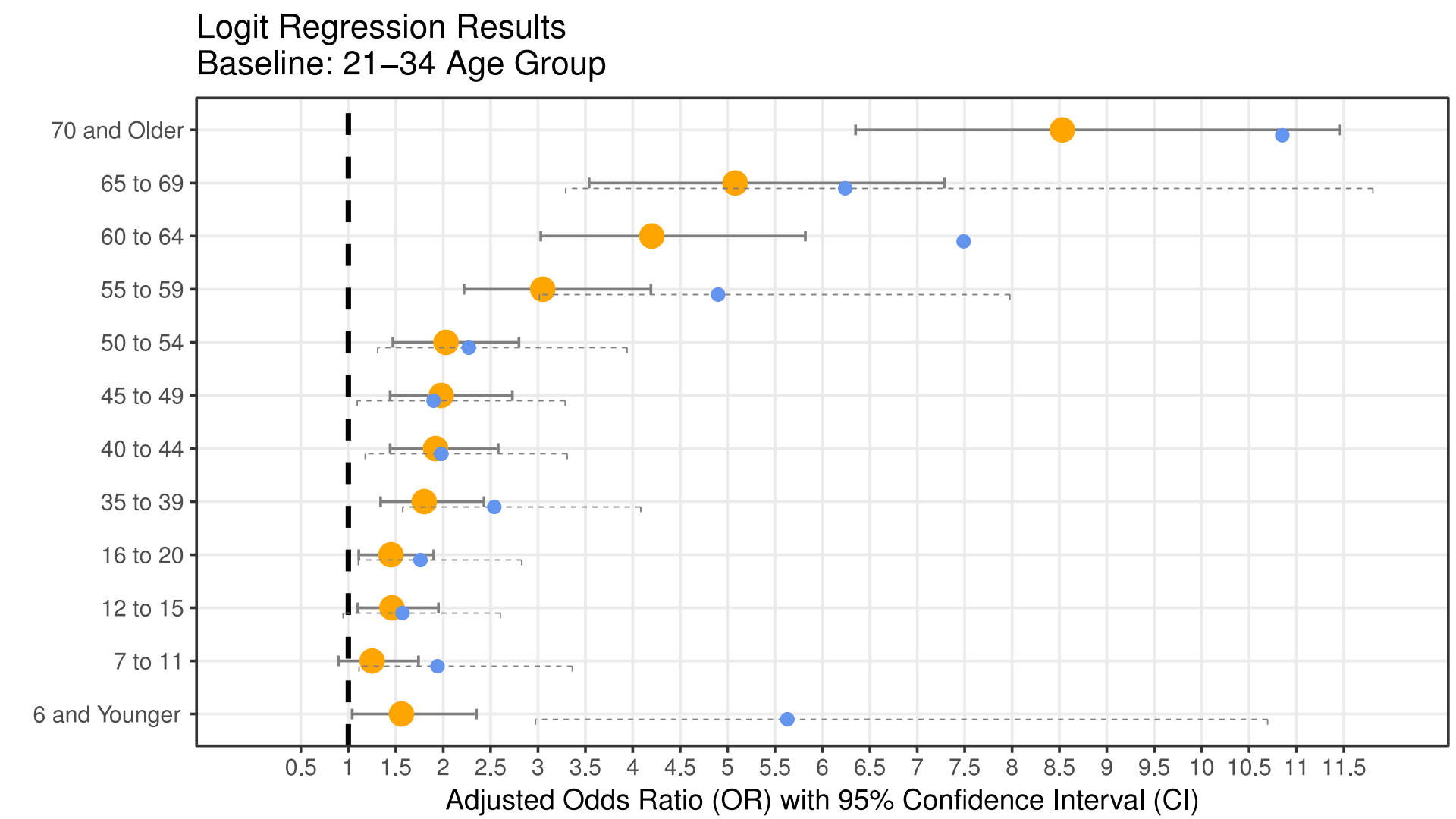
1. **Age** matters.
2. **Head-on and rear-end collisions** are bad.
3. **Traffic controls** matter.
4. **Helmets** save lives.

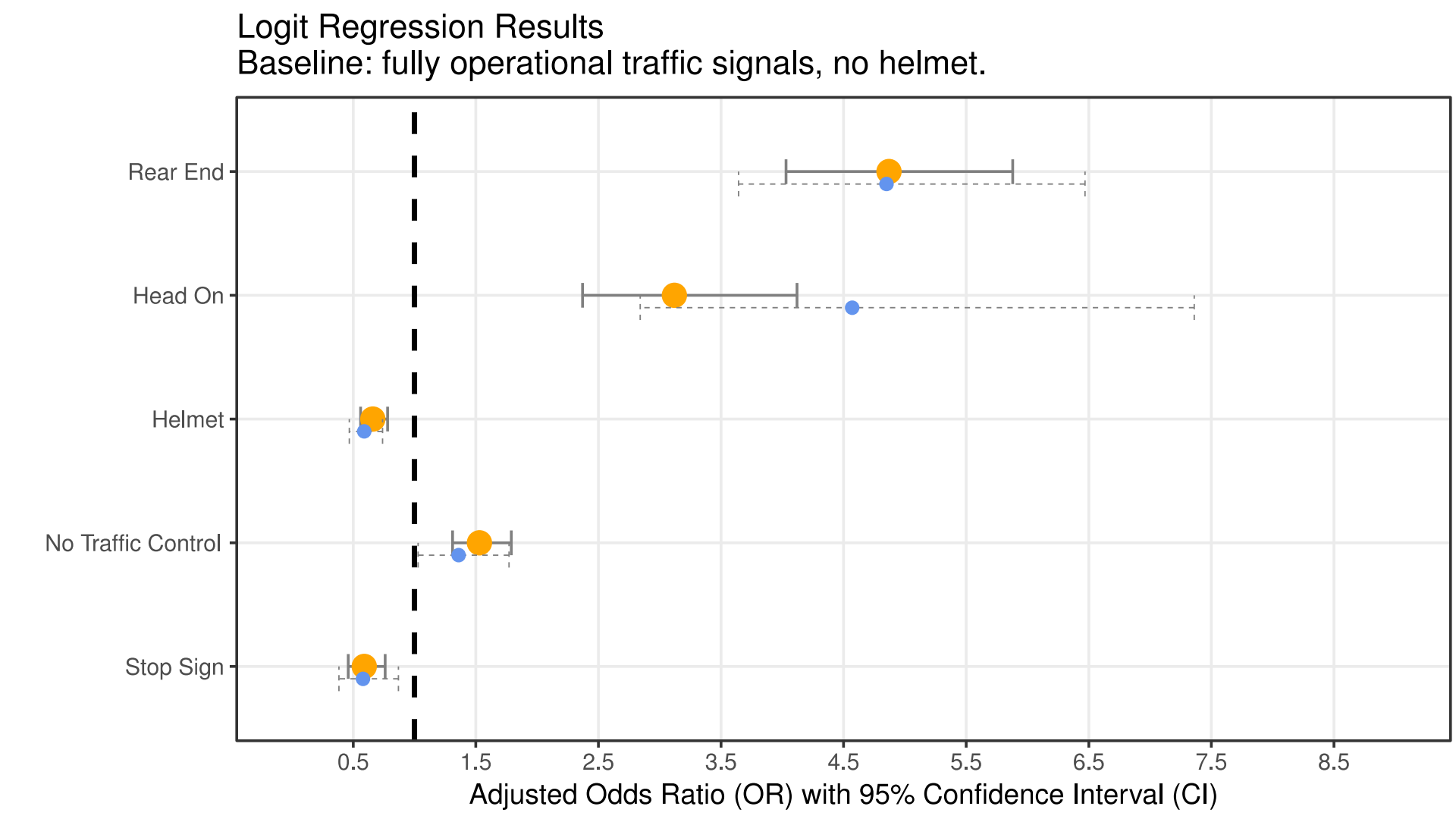
DATA WRANGLING

DATA GAP

ANALYTICAL STRATEGY




Logit Regression Results
Baseline: 21–34 Age Group
70 and Older
65 to 69
60 to 64
55 to 59
50 to 54
45 to 49
40 to 44
35 to 39
16 to 20
12 to 15
7 to 11
6 and Younger
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
5.5
6
6.5
7
7.5
8
8.5
9
9.5
10
10.5
11
11.5
Adjusted Odds Ratio (OR) with 95% Confidence Interval (CI)


Logit Regression Results
Baseline: fully operational traffic signals, no helmet.
Rear End
Head On
Helmet
No Traffic Control
Stop Sign
0.5
1.5
2.5
3.5
4.5
5.5
6.5
7.5
8.5
Adjusted Odds Ratio (OR) with 95% Confidence Interval (CI)

YOU ARE DOING IT WRONG.

CAVEATS

$$\Pr(\textbf{Die in Bicycle Collision}) = \Pr(\textbf{Die} \mid \textbf{Bicycle Collision}) \times \Pr(\textbf{Bicycle Collision})$$

RECAP

1. **Age** matters.
2. **Head-on and rear-end collisions** are bad.
3. **Traffic controls** matter.
4. **Helmets** save lives.

THANK YOU!

Questions?

Comments?

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