

Evaluation of Pedestrian/Bicycle Crash Injury Case Definitions for Use with NC DETECT

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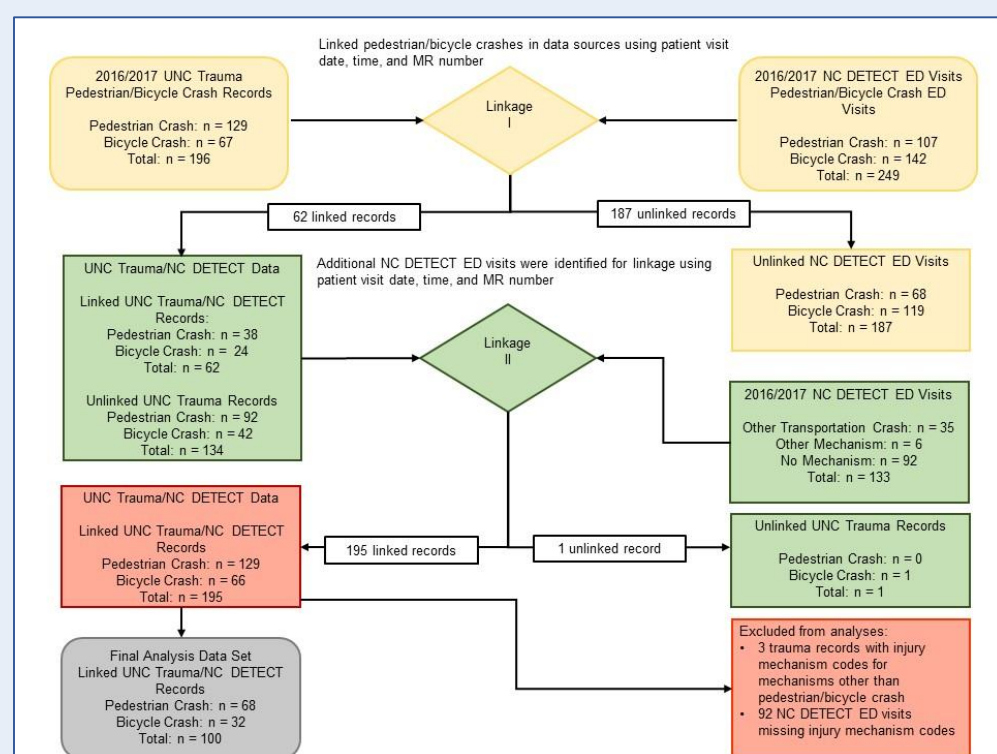
1 Introduction

- Since 2011, the number of NC pedestrian deaths have **increased an average of 6% per year**; reversing a 35-year trend.¹
- Injury surveillance methods for pedestrian/bicycle crashes **need improvement**.
- We developed four **ICD-10-CM based pedestrian/bicycle crash injury case definitions for use with NC DETECT**, NC's syndromic surveillance system.²
- Objective:** Evaluate ICD-10-CM pedestrian/bicycle crash case definitions by comparing to **Level I UNC Trauma Center data** ("gold standard").

2 Methods

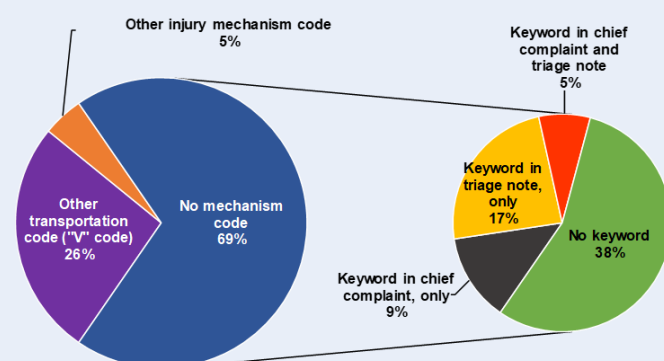
- Linked to 2016-2017 UNC Trauma Center data using the variables date of visit, time of visit, and medical record number.
- Examined linked/unlinked UNC Trauma Center/NC DETECT data.

Flow chart of data linkage process

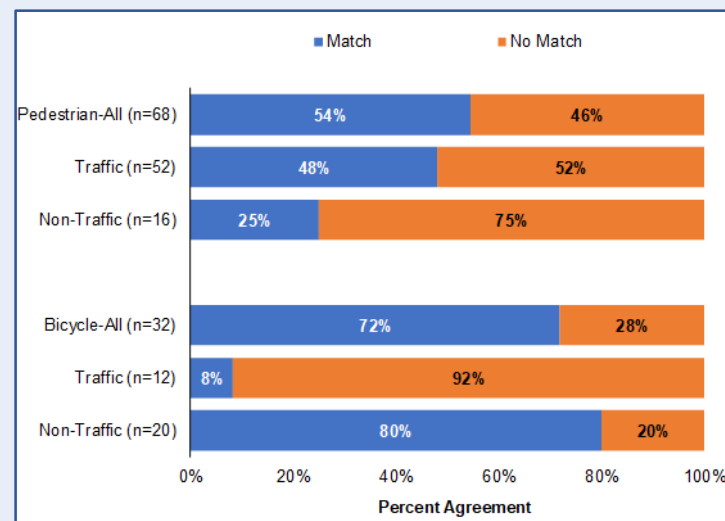


3 Results

Why were linked NC DETECT records not flagged as pedestrian/bicycle-related (n=133)?



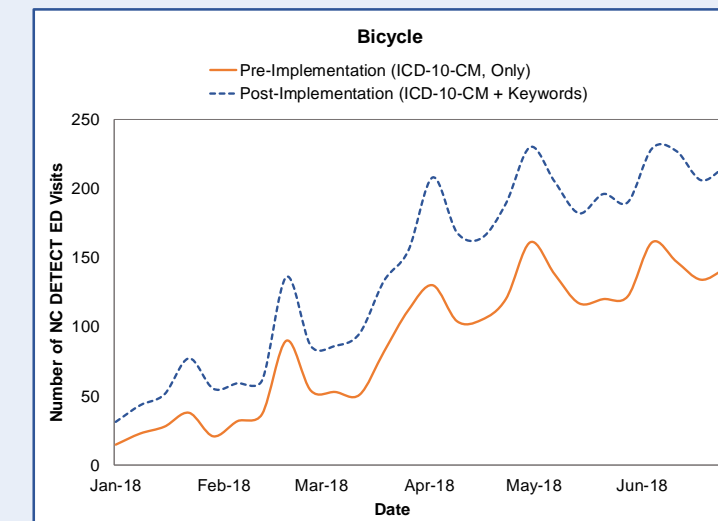
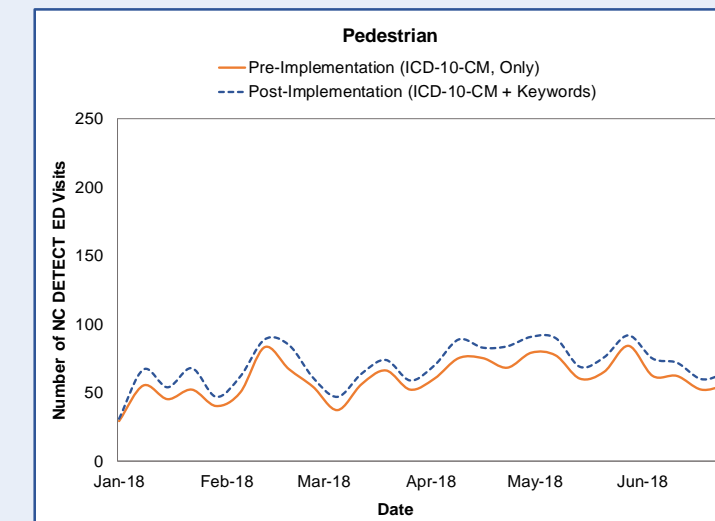
Percent agreement for linked UNC Trauma ("gold standard")/ NC DETECT records with mechanism codes (n=100)



List of pedestrian and bicycle crash injury-related keywords added to NC DETECT case definitions

	Pedestrian	Bicycle
Inclusions	PEDESTRIAN', 'PED STRUCK', 'PIDS STRUCK', 'PED VS MVC', 'PIDS VS MVC', 'PED VS CAR', or 'PIDS VS CAR'	BICYCLE', 'BIKE', 'PEDAL', or 'BICYCLIST'
Exclusions	MOPED', 'SCOOTER', 'PEDAL', 'BICYCLE', or 'BIKE'	MOTORCYCLIST', 'MOTOR CYCLIST', 'SCOOTER', 'MOTORCYCLE', 'PEDAL PULSE', 'PEDAL EDEMA', 'PEDAL PULSES', 'MOPED', 'DIRT BIKE', 'DIRTBIKE', 'MOTOR BIKE', 'MOTORBIKE', 'CAR' OR BIKE', or 'PEDESTRIAN'

Comparison of NC DETECT pedestrian/bicycle crash injury case definitions pre/post-implementation of keywords



4 Conclusions

- Pedestrian and bicycle crashes are a **major contributor** to NC motor vehicle crash morbidity and mortality.
- Trauma registry data serve as a suitable **gold standard** dataset for ED surveillance data.
- It is important to **develop, evaluate, and revise** injury surveillance case definitions.
- The **inclusion of keywords** in case definitions can help account for ICD-10-CM injury mechanism code missingness common to ED surveillance systems.

5 Acknowledgements

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Data Attribution & Disclaimer: NC DETECT is a statewide public health syndromic surveillance system, funded by the NC DPH Federal Public Health Emergency Preparedness Grant and managed through collaboration between NC DPH and UNC-CH Department of Emergency Medicine's CCHI. The NC DETECT Data Oversight Committee does not take responsibility for the scientific validity or accuracy of methodology, results, statistical analyses, or conclusions presented.

References:

- Thomas L, Vann, M, Levitt D. NC Pedestrian Crash Trends and Facts 2011-2015. RP 2017-42. Chapel Hill, NC: HSRC 2018. http://www.pedbikeinfo.org/pbcat_nc/pdf/summary_ped_facts11-15.pdf Accessed Sept 12, 2018.
- NCIPC. Help and Tools for Injury Data; Atlanta, GA: CDC 2018. <https://www.cdc.gov/injury/wisqars/dataandstats.html>. Accessed Sept 12, 2018.

