Collaborative Sciences Center for ROAD SAFETY

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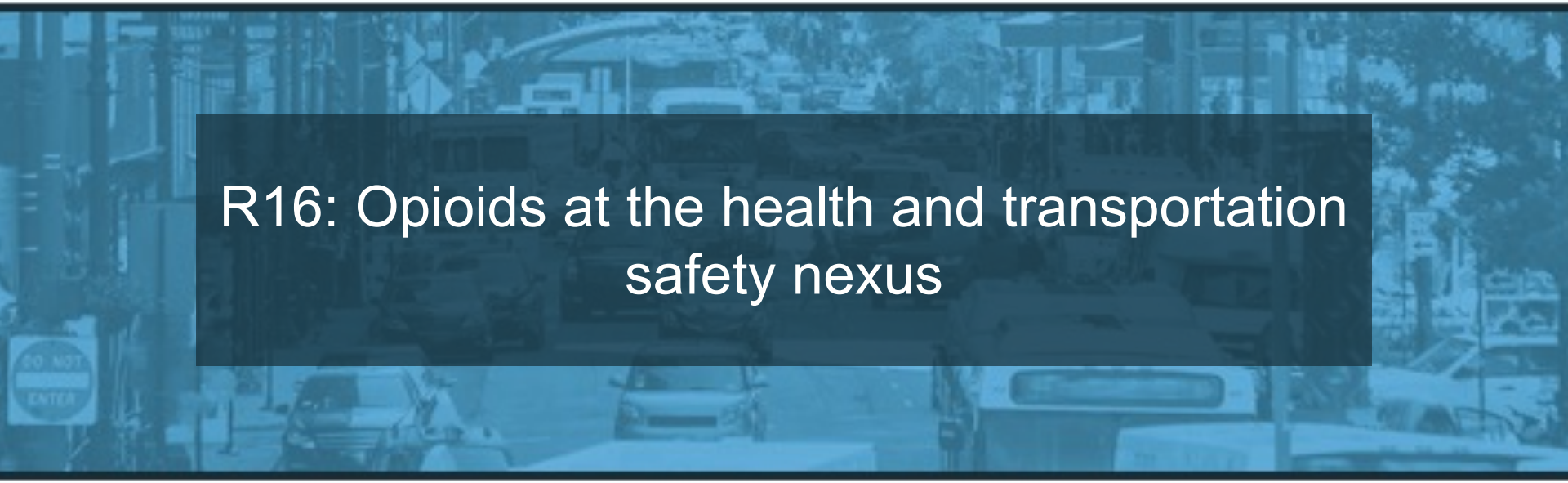

R16: Opioids at the health and transportation safety nexus

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R16: Opioids at the Health and Transportation Safety Nexus

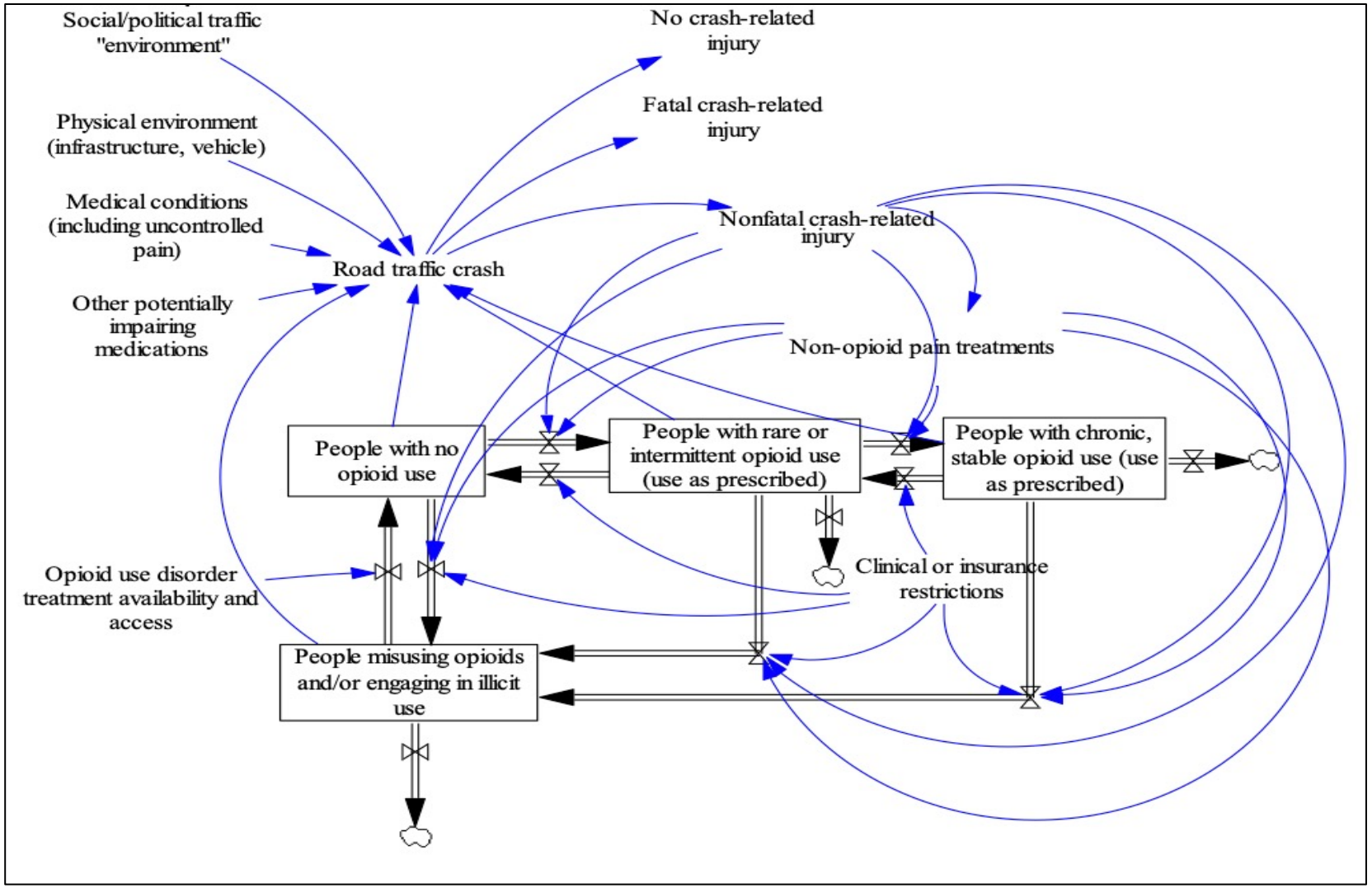
Main Idea: The prescription opioid crisis is linked to transportation safety two ways:

1. People prescribed opioids operate motor vehicles and are involved in crashes possibly linked to their impairment (i.e., drugged driving)

2. People in crashes are injured, and many will be prescribed opioids for pain management. A small portion of these will be at risk of abuse.

Prescription Drug Monitoring Programs (PDMPs) can be linked with Police Crash data (or other traffic injury data) to inform system linkages within these two public health challenges

System Linkages



State-by-State Dataset Analysis

PDMP

Table 1. Select attributes of prescription drug monitoring programs[a] pertinent to crash report linkage, investigation, and analyses (n=51)[b]

Attribute	N (%)
Year Prescription Drug Monitoring Program (PDMP) first operational	
<1990	9 (18)
1990-1999	7 (14)
2000-2009	17 (33)
2010-2017	18 (35)
Agency responsible for PDMP administration	
Pharmacy Board	20 (39)
Department of Health	17 (33)
Professional Licensing Agency	6 (12)
Law Enforcement Agency	4 (8)
Substance Abuse Agency	3 (6)
Consumer Protection Agency	1 (2)
Authority to release PDMP data for research	
No authority to release	3 (6)
Authorized to release	48 (94)
Law enforcement access to data	
Access if active investigation	36 (71)
Access if court process (e.g., court order, subpoena, search warrant)	15 (29)
Types of data available to law enforcement	
Patient, prescriber, dispenser histories	42 (82)
Patient and prescriber histories	6 (12)
Patient history	1 (2)
Unknown	2 (4)
Controlled substances monitored [c]	
Schedules II-IV	12 (24)
Schedules II-V	39 (76)
Requirement that substance-related driving convictions be included in PDMP	
Yes	1 (2)
No	50 (98)

Police Crash

Table 2. Select attributes of crash report forms pertinent to linked analyses with prescription drug monitoring program data (n=51)[a]

Attribute	N (%)
Year of last crash report form update	
2005-2009	16 (31)
2010-2014	23 (45)
2015-2018	12 (24)
Field to document whether drugs were suspected [b]	
Yes	30 (59)
Unknown or not mentioned	21 (41)
Field to document type of drug test administered [b]	
Yes	43 (84)
Unknown or not mentioned	8 (16)
Detail of drug test result documentation [b,c]	
Positive or negative indication for drug involvement	28 (55)
Drugs selected from a pre-defined list	11 (22)
Narrative, supplemental document, or drug recognition expert report	4 (8)
Unknown or not mentioned	8 (16)
Field for whether prescription or illicit drugs involved [b]	
Yes	33 (65)
Unknown or not mentioned	18 (35)

Pressing research questions best answered using linked crash reports and prescription drug monitoring program data

- What are the prescription opioid and controlled substance histories and trajectories of those involved in crashes (of all severity levels) compared to those who do not crash?
- How do crash rates for those on chronic opioid and other controlled substance regimens compare to those on short-term regimens or non-users?
- Which specific opioid or other controlled substance types, dosages, and combinations are associated with increased rates of road traffic crashes?
- How often are persons of different crash-related injury severities dispensed opioids following a crash and at what level (e.g., dose, days' supply)?
- How often do crashes or other traffic convictions trigger entry into opioid (or other substance) use disorder treatment (e.g., initiation of buprenorphine treatment)?
- Do different crash and injury typologies result in different levels of opioid prescribing?

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Connections between opioids and road injury: linkage of prescription monitoring and crash databases

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Evidence that linkage can be done:

Table 3
Description of opioid analgesic use in the 6 mo after injury by workers who reported one injury to Tennessee Workers' Compensation 2013–2015 (n = 57,282)[*,†]

	Mean (SD)	Median (IQR)
Maximum received daily MME	42.8 (39.26)	31.3 (21.43–50.00)
Maximum received d' supply	9.4 (9.81)	5.0 (3.00–10.00)
Number of prescribers visited	1.4 (0.76)	1 (1.00–2.00)
Number of dispensers visited	1.2 (0.52)	1 (1.00–1.00)
Most frequently received types of opioid[†]	n (%)	
Hydrocodone SA	39,813 (69.5)	
Oxycodone SA	13,171 (23.0)	
Tramadol SA	13,647 (23.8)	
Codeine	2084 (3.6)	
Morphine LA	472 (0.8)	
Type of payment[†]		
Commercial Insurance	37,283 (65.1)	
Workers' Compensation	11,567 (20.2)	
Cash	10,599 (18.5)	
Medicaid	3966 (6.9)	
Medicare	1152 (2.0)	
Military	10 (0.02)	
Indian Nations	1 (0.0)	
High-risk opioid prescribing pattern experienced		
Opioid received within 30 d of a benzodiazepine	5451 (9.5)	
>100 mean daily MMEs	2866 (5.0)	
Long-acting opioid	1437 (2.5)	
Multiple provider episode[‡]	1185 (2.1)	
Received a benzodiazepine in the 6 mo after injury	5785 (10.1)	
Most frequently received types of benzodiazepine[†]		
Alprazolam	2683 (4.7)	
Diazepam	1415 (2.5)	
Clonazepam	1025 (1.8)	
Lorazepam	652 (1.1)	
Temazepam	221 (0.4)	

IQR = interquartile range; MME = morphine milligram equivalents; SA = short-acting.
[*] Table is limited to injured workers who received an opioid within 6 mo of injury.
[†] Categories are nonexclusive, injured workers may appear in more than one category.
[‡] Visiting three or more prescribers and three or more providers in the 6 mo after injury.

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Original article

Prescription opioid use by injured workers in Tennessee: a descriptive study using linked statewide databases

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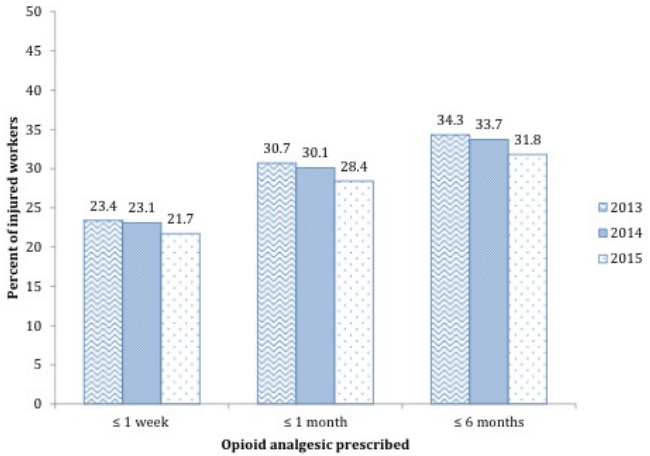

Fig. 2. Receipt of an opioid analgesic after injury in workers who reported one injury to Tennessee Workers' Compensation 2013–2015 (n = 172,256).