

# When Safety Messages Make Us Less Safe: Evidence from Traffic Fatality Messages

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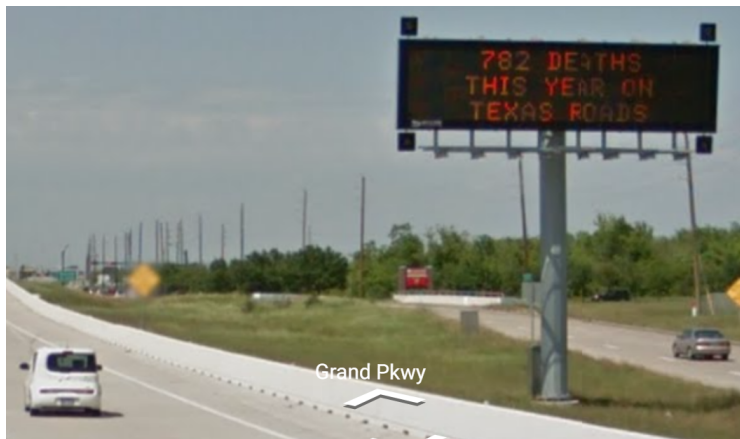
27 March 2019

# Well-intentioned, but unevaluated policies, are commonplace

## Motivation

- ▶ Well-intentioned, but unevaluated policies, are commonplace
- ▶ Sometimes rational—evaluation is costly
- ▶ We show a seemingly innocuous intervention **increases** # of traffic accidents

## Research setting: Traffic safety campaign



# Identification comes from exogenous assignment to treatment

## God blessed Texas!

- ▶ Large state with over 800 DMSs
- ▶ TxDOT decided to show these fatality messages for only one week each month (the Monday-to-Monday prior to monthly TxDOT board meeting)
- ▶ Research design: Compare number of accidents near DMS week prior to board meeting to other weeks in the same month

# Fatality messages lead to more traffic accidents

## Results

- ▶ Estimates show signs **increase** traffic accidents
- ▶ Effect wears off with distance
- ▶ Possible mechanism: Signs induce fear and distract drivers
  - ▶ Signs hurt most when reported # of deaths is high
- ▶ After 5 years of seeing messages, still causing more accidents

# Compare outcomes when a fatality message is assigned to show, vs. not, within same month-day of week-hour

## Research design

- ▶ Calculate all highway accidents within a fixed distance following a DMS for each hour of each day
- ▶ Test for differences in accident counts when DMS is assigned to displaying a fatality message relative when not assigned within the same segment-year-month-day of week-hour
- ▶ Control for weather conditions and holidays

# More accidents week prior to board meeting

Effect of week prior to board meeting on # of accidents

	2010–Aug 2012			Aug 2012–2017		
	(1) 3 km	(2) 5 km	(3) 10 km	(4) 3 km	(5) 5 km	(6) 10 km
Board meeting	0.031 (0.037)	-0.001 (0.058)	-0.002 (0.112)	0.084** (0.034)	0.151*** (0.053)	0.469*** (0.103)
Trace precipitation	1.716*** (0.125)	4.024*** (0.201)	13.902*** (0.395)	1.623*** (0.091)	3.997*** (0.141)	13.681*** (0.280)
Precipitation	3.354*** (0.121)	8.026*** (0.193)	26.800*** (0.394)	4.903*** (0.105)	11.758*** (0.173)	39.127*** (0.376)
Observations	19,504,400	19,504,400	19,504,400	40,931,315	40,931,315	40,931,315
Adj R-squared	0.01	0.02	0.05	0.02	0.03	0.09
S-Y-M-D-H FE	Yes	Yes	Yes	Yes	Yes	Yes
Holiday FE	Yes	Yes	Yes	Yes	Yes	Yes

# No effect of board meeting prior to campaign

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## Conclusion

- ▶ Results
  - ▶ Fatality messages **increase** traffic accidents
  - ▶ Effect wears off with distance
  - ▶ Possible mechanism: Signs induce fear and distract drivers
    - ▶ Signs hurt most when reported # of deaths is high
  - ▶ After 5 years of seeing messages, still causing more accidents
- ▶ Our questions
  - ▶ Ideas for testing the mechanism?
  - ▶ Other possible reasons the signs hurt?