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Laws, Technology, and the Persistent Problem of Distracted Driving Crashes

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Overview

- Distracted driving is not a new problem
- Mobile communication devices are a new distraction
- Research confirms that distraction from these devices increases crash risk
- Mobile communication device use in vehicles has increased
 - But we don't know if distraction has changed in amount or degree
- Overall, crash risk has not increased with increasing device use
- State laws banning some forms of use have changed use behavior but they have not reduced overall crash risk
- Next directions:
 - Enhanced enforcement of bans
 - Better understanding of distracted driving (what is undistracted driving)

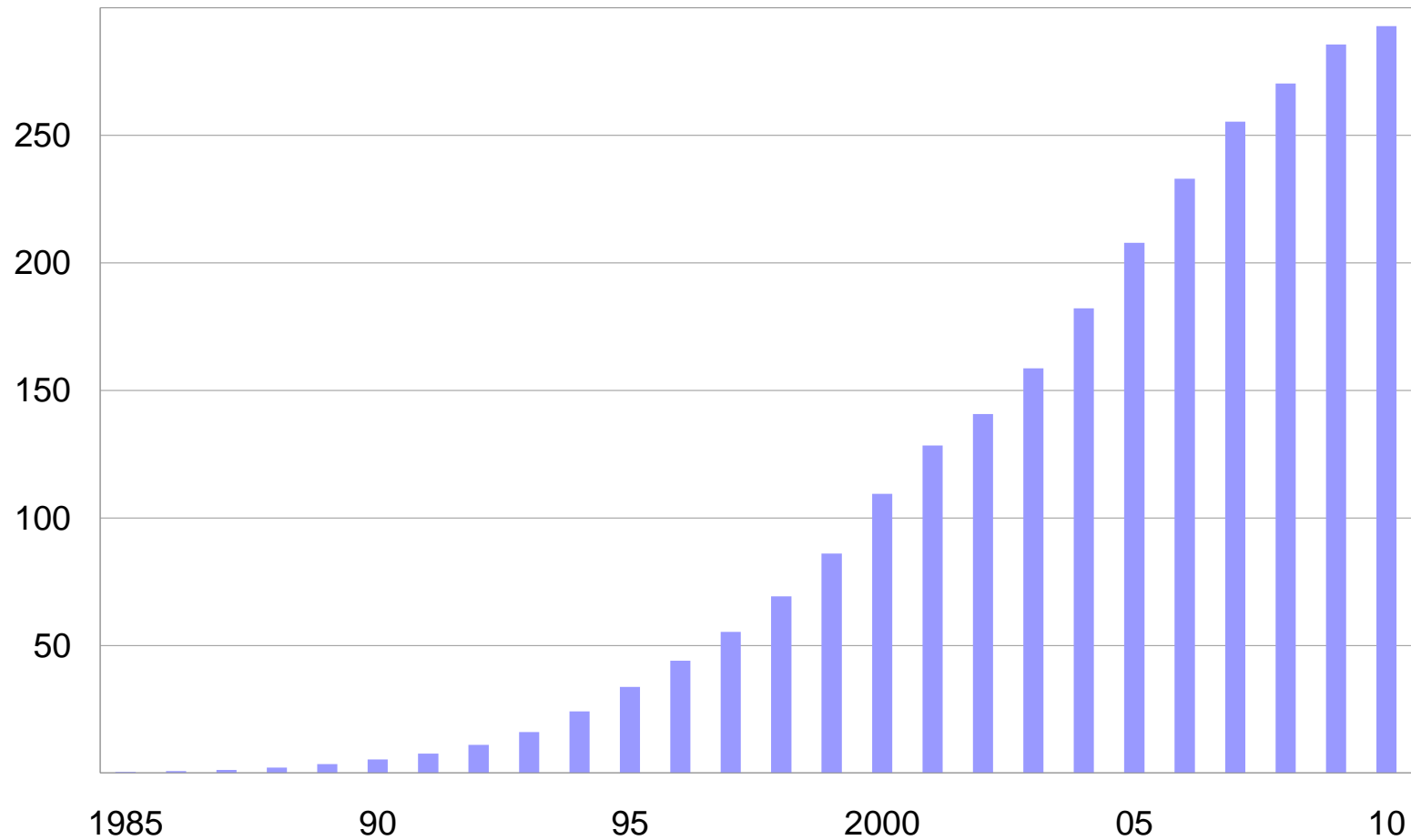
Distracted driving, technology, and crashes

Distracted driving is not new

- 1979 – Indiana “Tri-Level Study” estimated “driver error” to be proximate cause of 9 out of 10 crashes
- Personal reports from drivers reveal a variety of distracting events preceding crashes
 - Changing audio tapes/CDs
 - Eating/drinking
 - Children, bugs, animals in vehicle
 - Reading, shaving, and applying makeup

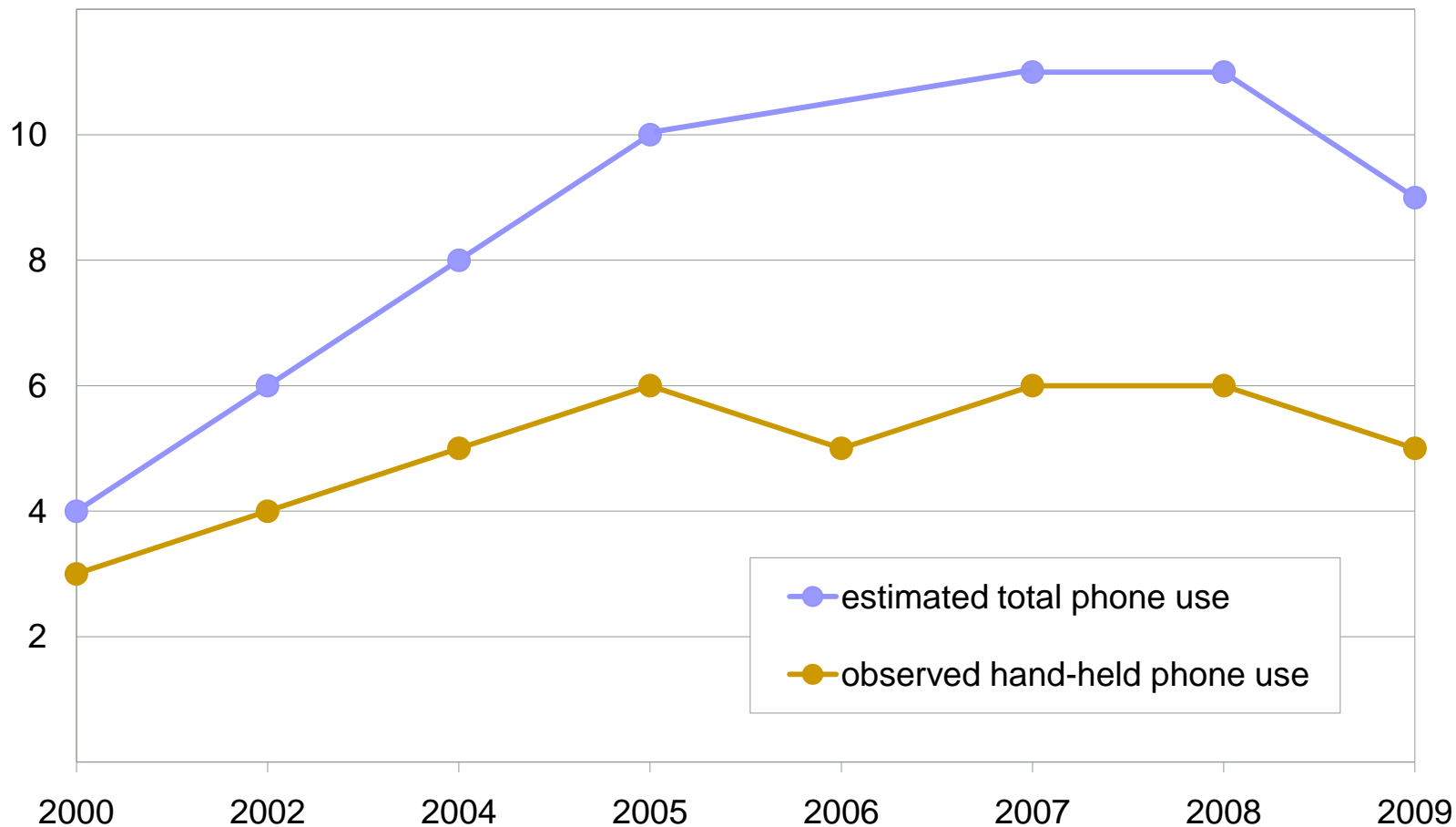
Cellphone subscribers

In millions, 1985-2010



Percent of drivers talking on phones

National Highway Traffic Safety Administration, 2000-09

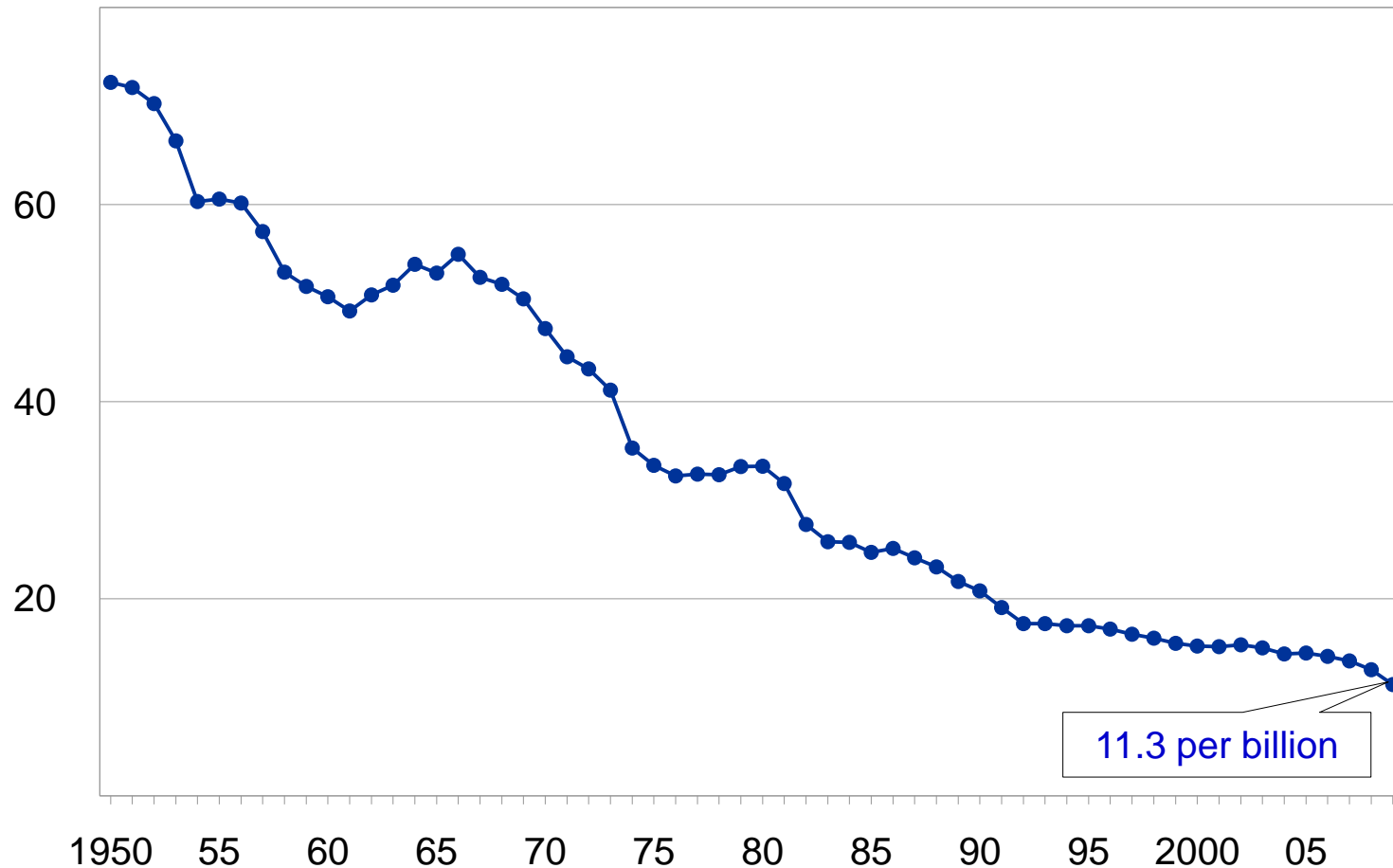


Cellphones and crash risk

- The best studies of crash risk verify crash-involved driver phone use from billing records. Because billing records are unavailable in the United States, such studies have been done in other countries
 - Canadian study found 4-fold increase in risk of property-damage crashes with cellphone use
 - IIHS study in Western Australia found 4-fold increase in risk of injury crashes
 - Both studies found similar risks for hand-held and hands-free phones

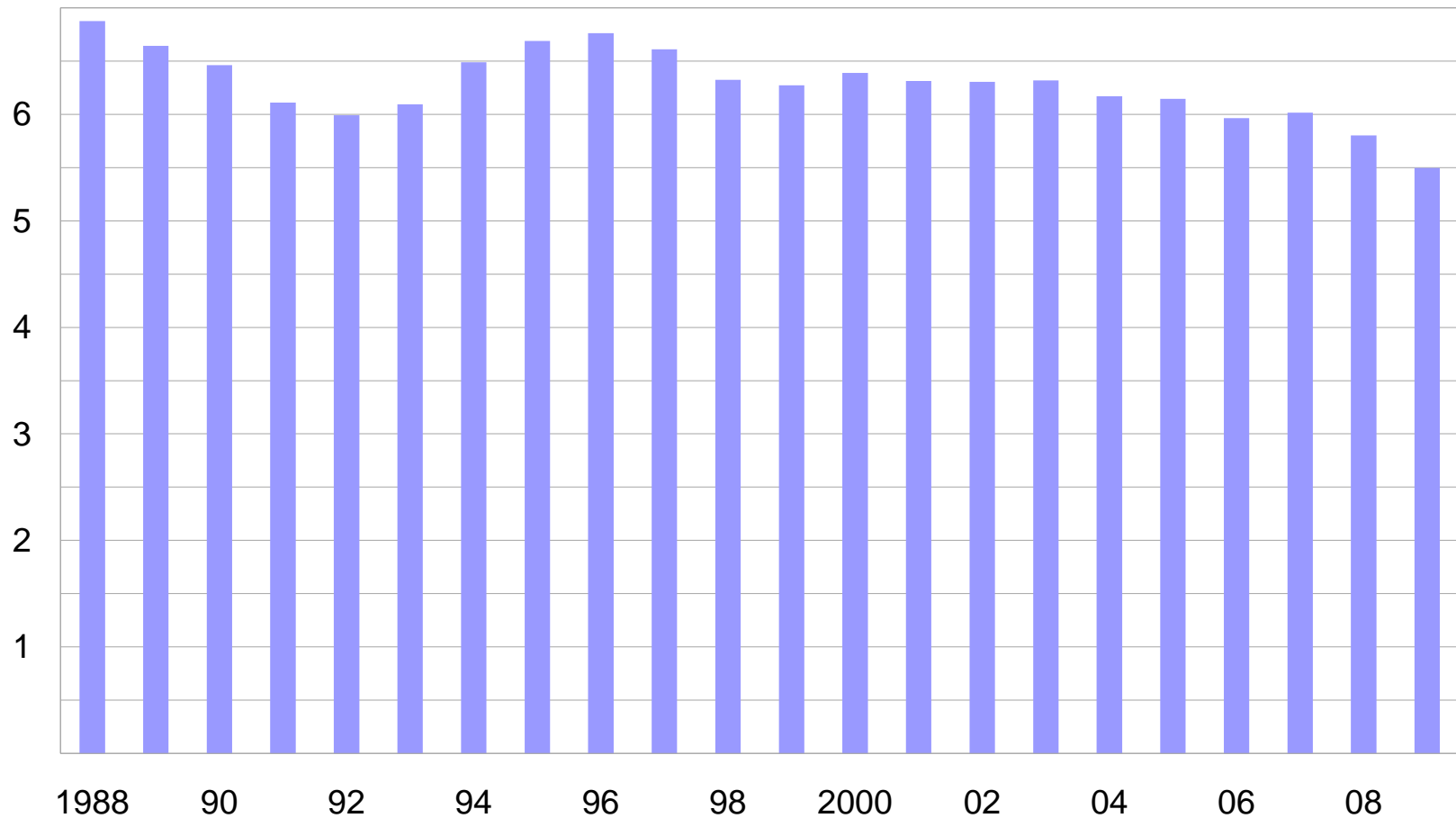
Motor vehicle crash deaths per billion miles traveled

1950-2009



All police-reported crashes

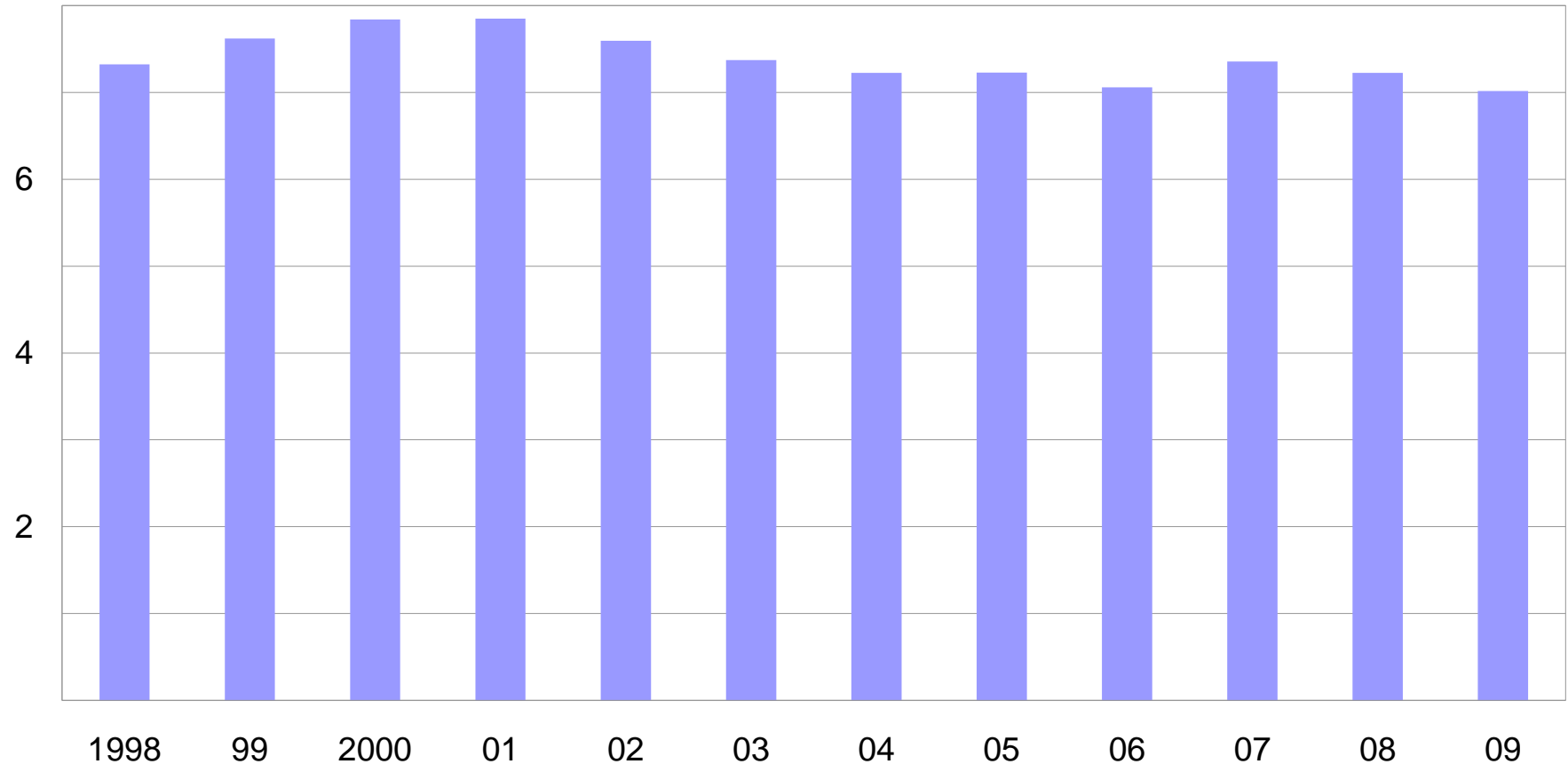
In millions, by calendar year



Collision claim frequencies

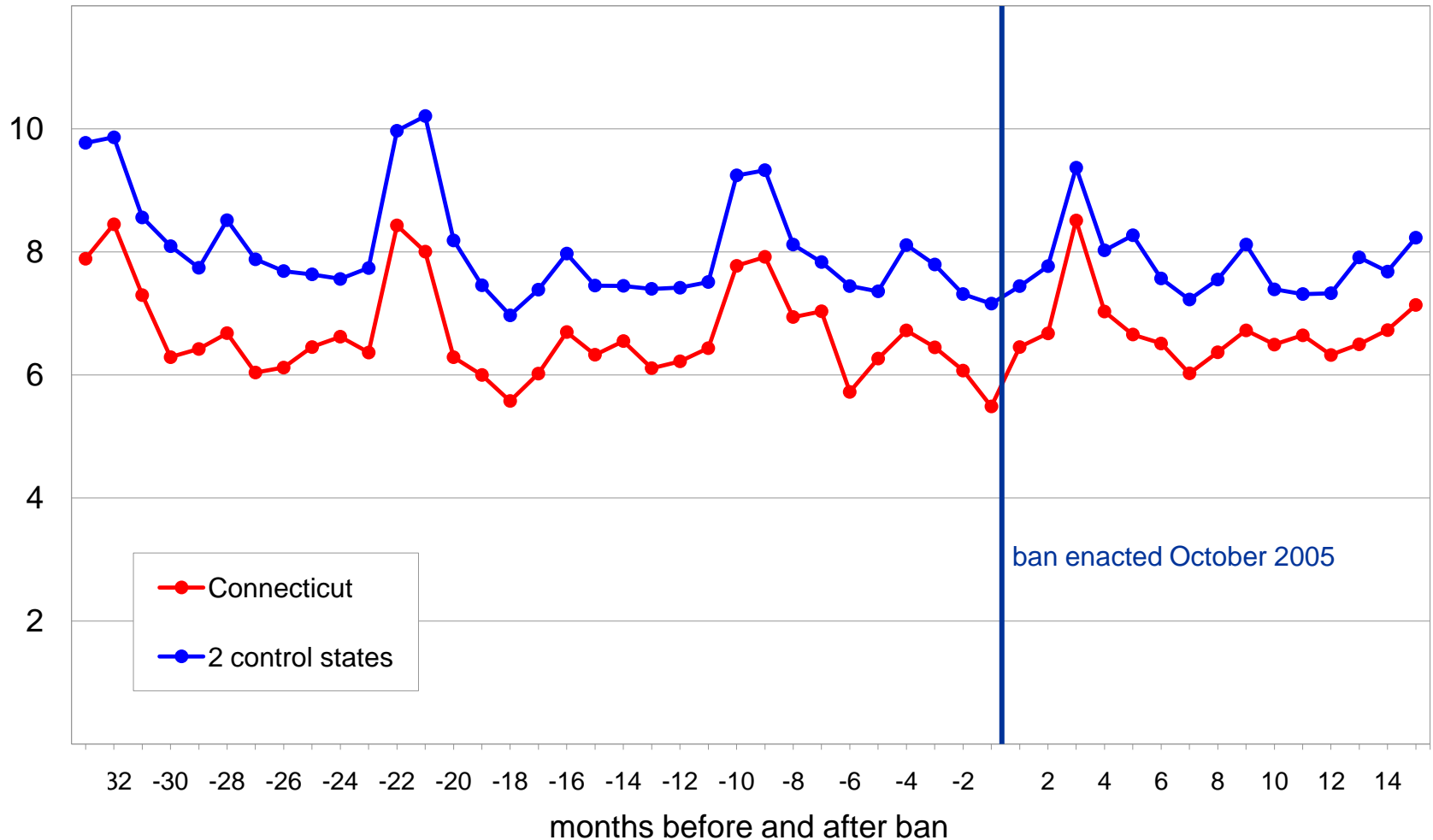
Claims per 100 insured vehicle years

By calendar year, based on 4 most recent model years



Crashes and hand-held cellphone ban in Connecticut

Collision claim frequencies by month for vehicles up to 3 years old, Connecticut vs. New York and Massachusetts



Estimated effect of hand-held cellphone bans in 4 states

Collision claim frequencies for vehicles up to 3 years old

	estimated effect vs. control states	p-value
California	-1%	0.2635
Connecticut	+4%	0.0317
Washington DC (vs. MD and VA)	-5%	0.1753
New York	+3%	0.0052

HLDI's study of handheld cellphone bans has been accepted for publication in *Chance*, a peer-reviewed journal of the American Statistical Association

Estimated effect of texting bans in 4 states

Collision claim frequencies for vehicles up to 9 years old

	estimated effect vs. control states	p-value
California	+8%	0.0001
Louisiana	+7%	0.0001
Minnesota	+9%	0.0001
Washington	+1%	0.4425

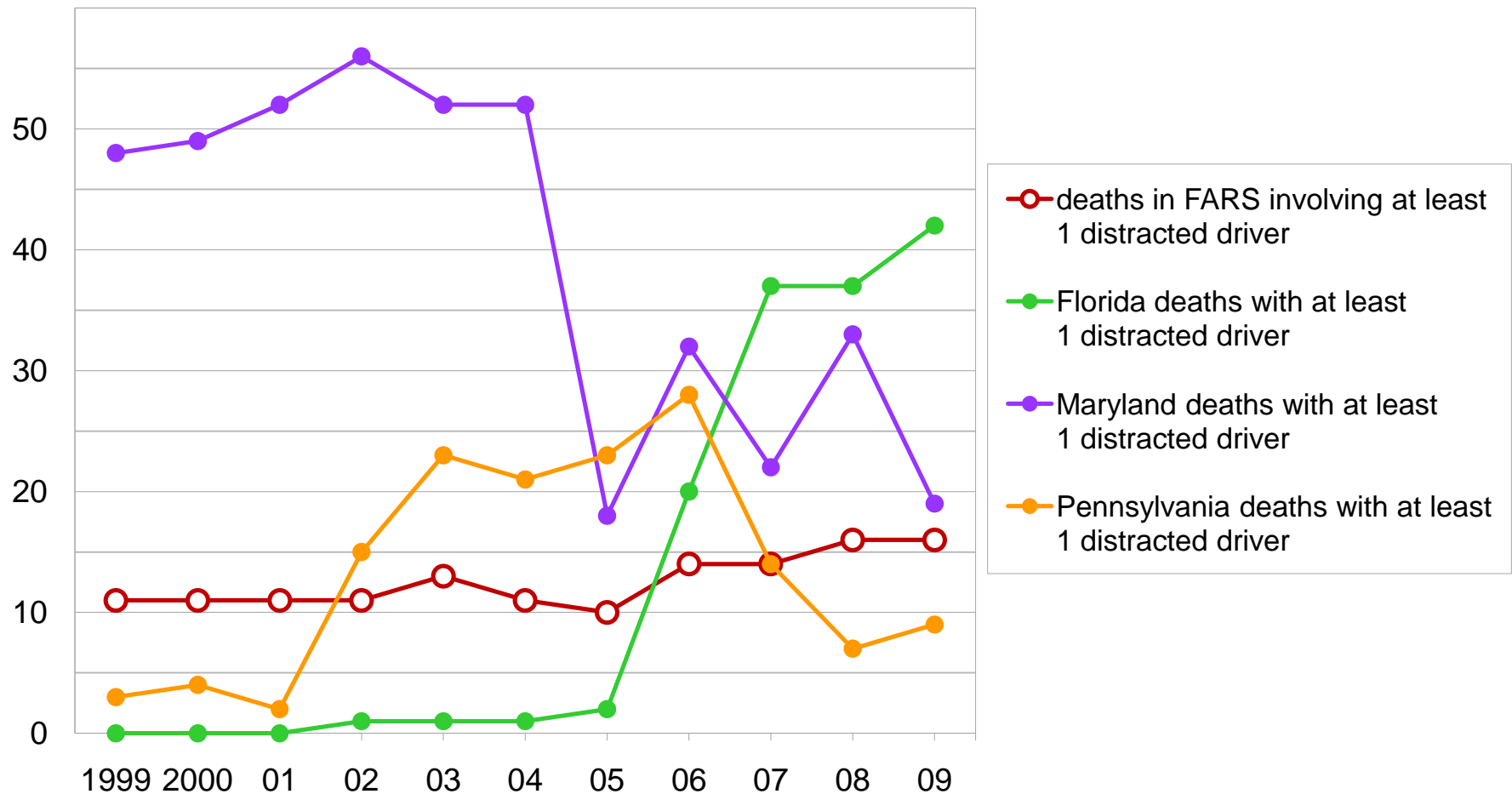
Estimated effect of texting bans in 4 states

Collision claim frequencies for vehicles up to 9 years old for rated drivers younger 25

	estimated effect vs. control states	p-value
California	+12%	0.0001
Louisiana	+8%	0.0027
Minnesota	+7%	0.0408
Washington	+5%	0.1373

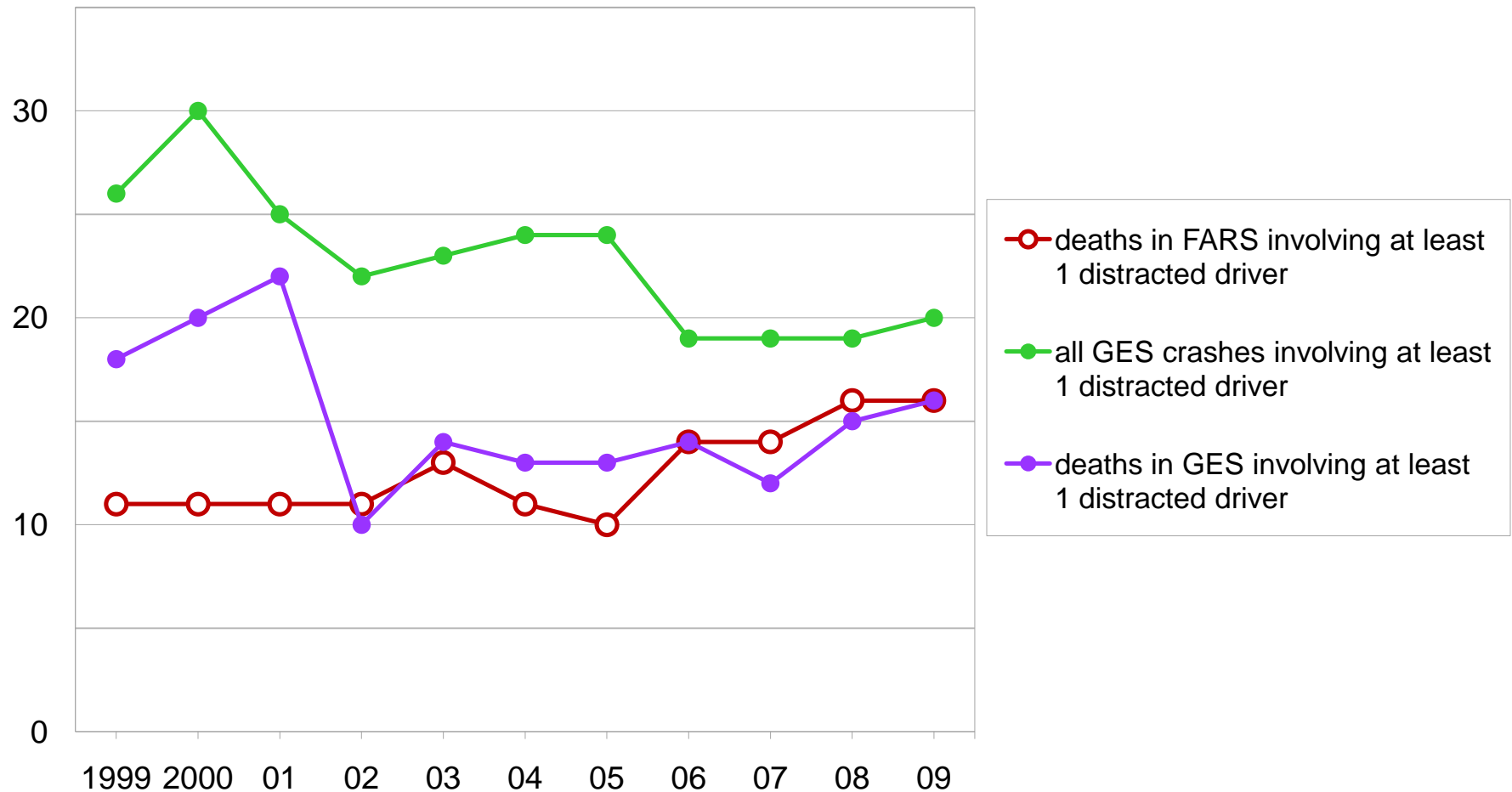
Changes in distracted driving coded in FARS

Percent, by calendar year



Distracted driving coded in FARS and GES

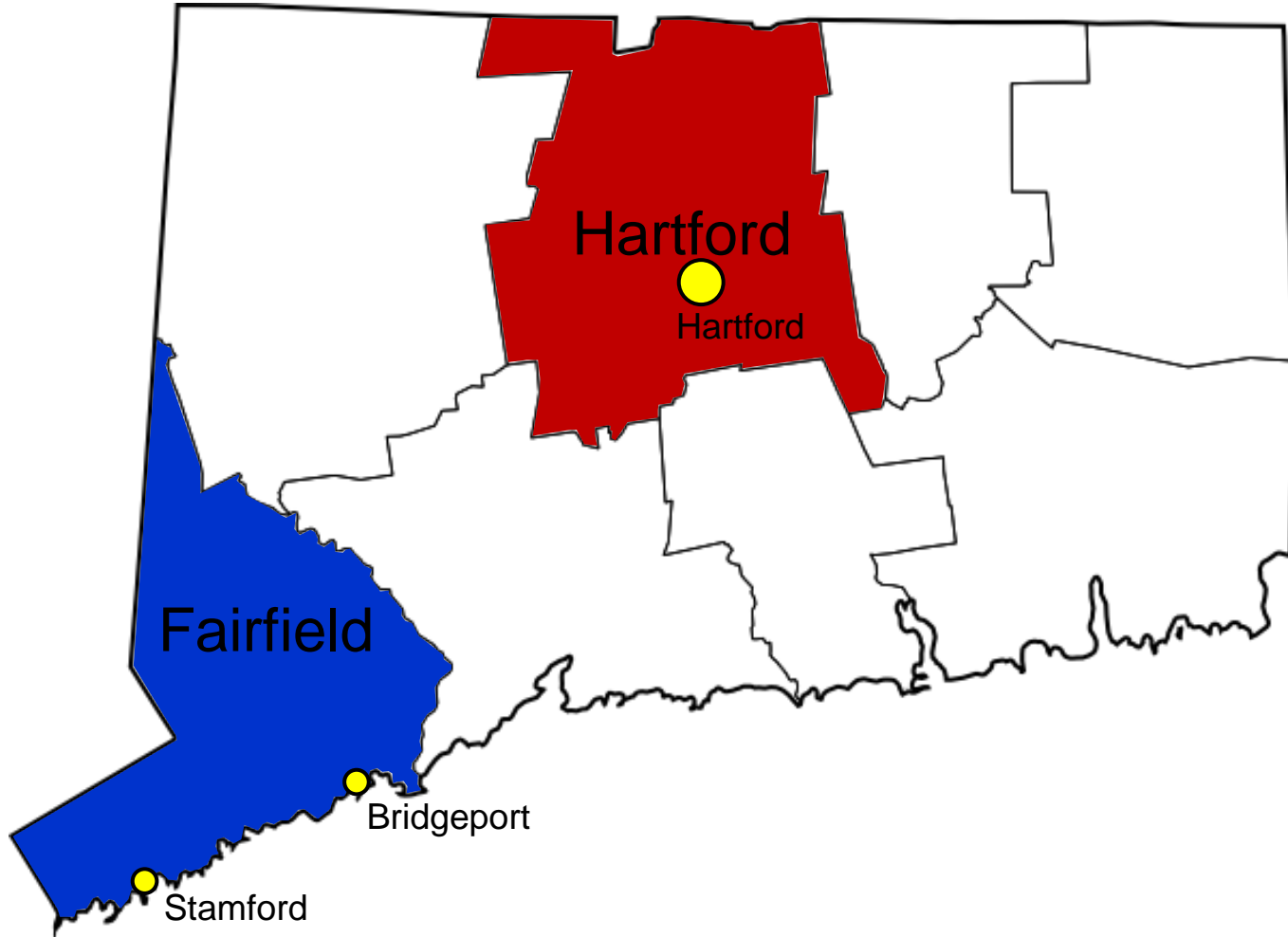
Percent, by calendar year



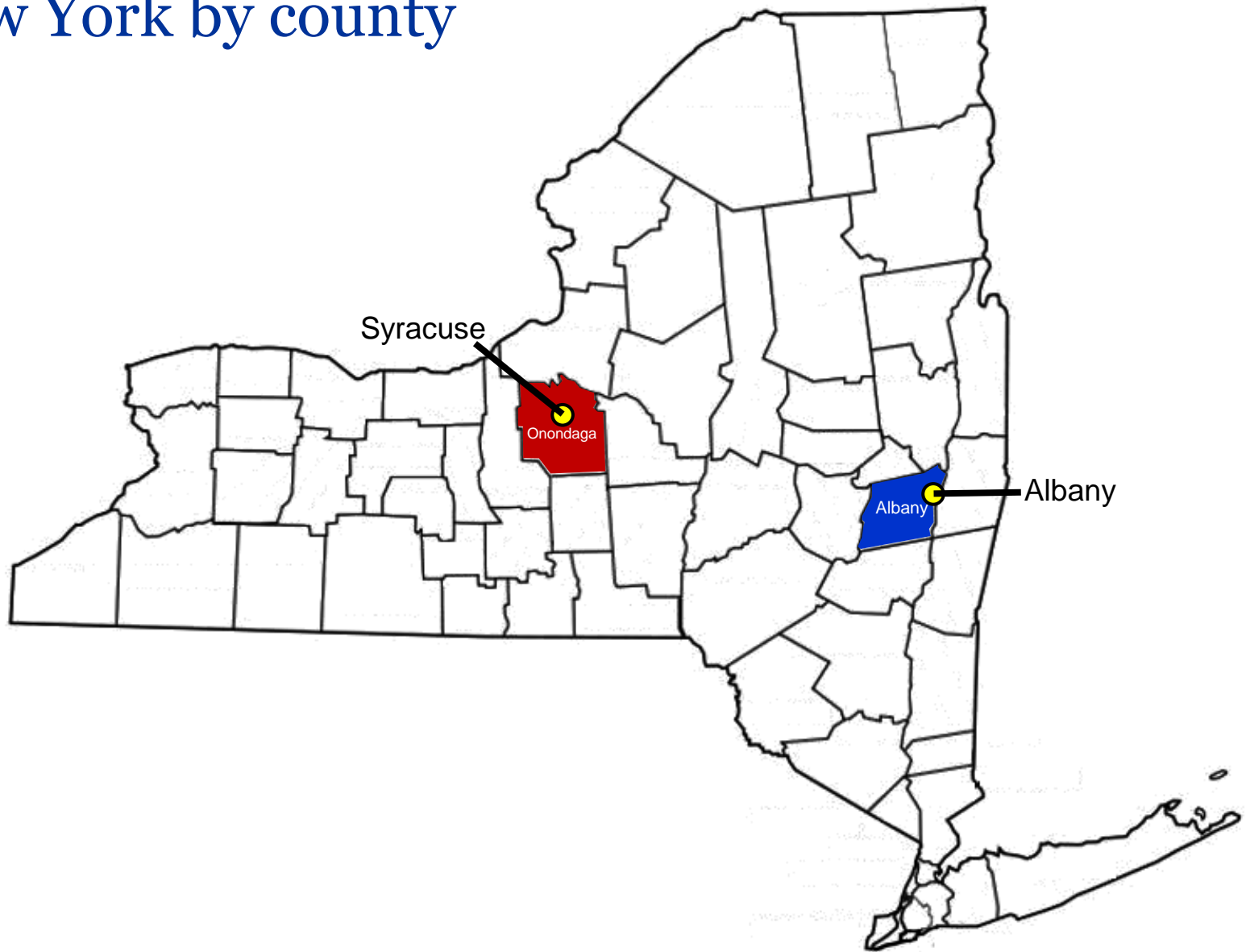


Next steps in distracted driving research

Connecticut by county



New York by county



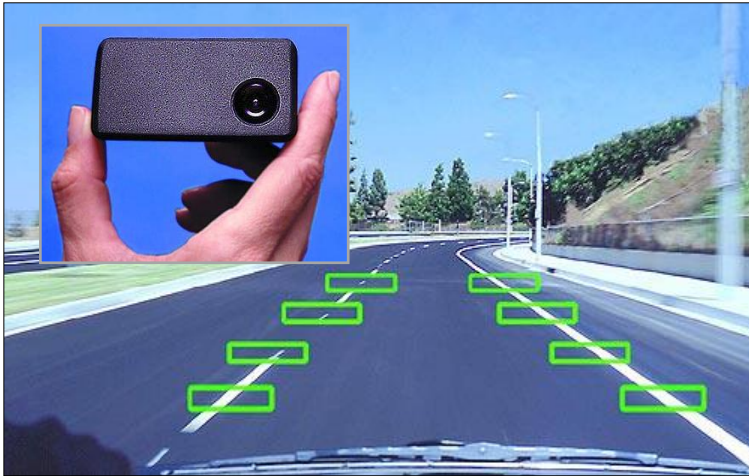
Behavior associated with driver cellphone use

Research methodology



- 100 cars driven by commuters in Northern Virginia
- Continuous video of all trips during 1-year study
- Examine video for 1 trip per driver per week
- Measure percent of time on cellphone
- Measure percent of time engaged in other possibly risky behavior
- Correlate cellphone use rates to other behavior and to rates of crashes and near crashes

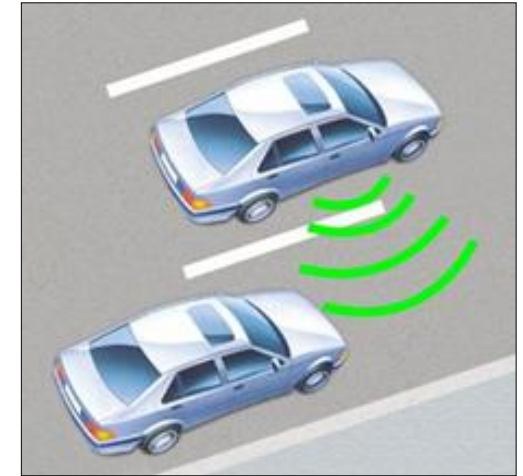
Advanced information technology for safety



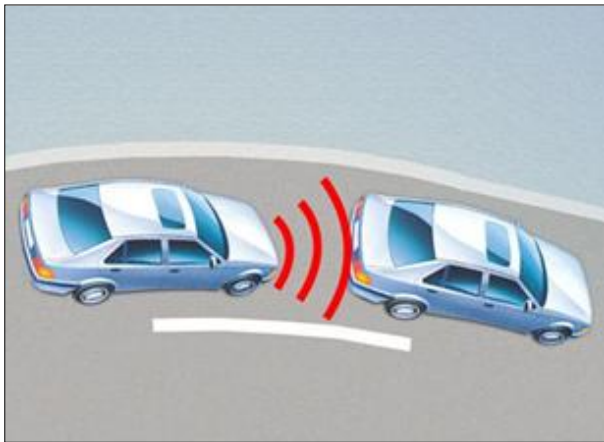
lane departure prevention



crash notification



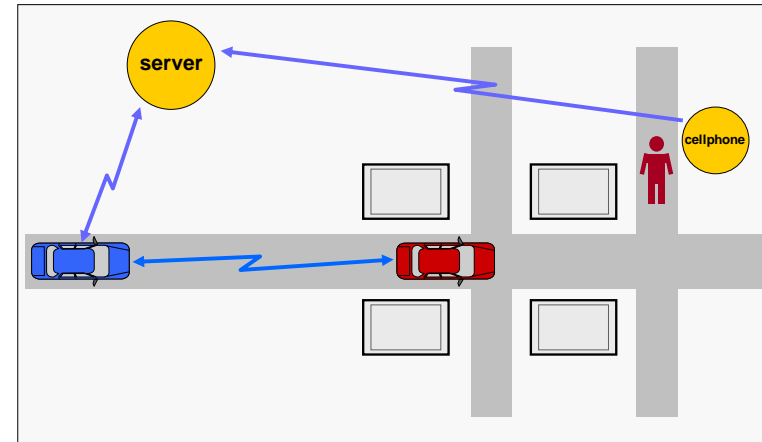
blind spot detection



forward collision warning
and auto braking



adaptive headlights



vehicle-to-vehicle communication



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