

Supporting New Teen Drivers During Independent Driving

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Factors that Increase Teen Driver Fatality Risk

- Speeding
- Alcohol
- Aggressive Driving
- Distracted Driving
 - Phones & mobile devices
 - Other passengers
- Not Using Seat Belt



Parents and Laws Play a Key Role in Teen Driver Safety

- Parent involvement in teen driving reduces crashes and increases adoption of safer driving behaviors.
- Graduated Driver Licensing (GDL) laws limit the risks to which teen drivers are exposed.



Technology Can Also Play a Role in Teen Driver Safety

- **Coaching in the vehicle**
 - Assistance beyond driver's education
 - Reinforcement of laws (e.g., GDL)
- **Prevention of risky behaviors**
 - If it's blocked, you can't do it
- **Reporting to parents**
 - Makes parents aware of driving behavior
 - Reinforcement of safe behaviors & laws



UMN's Teen Driver Support System (TDSS)

- Speed limits and speeding
- Aggressive driving
- Distracted driving
 - blocks phone use
- Supports MN traffic laws
 - e.g., seat belt, stop sign violations, texting ban
- Supports MN GDL Laws
 - e.g., passengers, curfew, cell phone calls

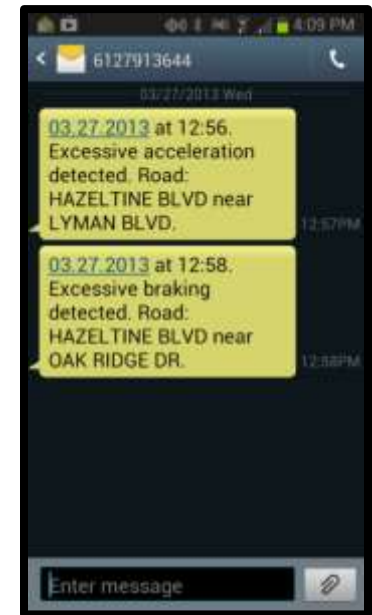


TDSS Capitalizes on Smartphone Technology

- Screen and phone audio convey alerts
- Other functions blocked
- Texts parents about risky behavior as it happens



Example: Intelligent speed adaptation with graduated warnings

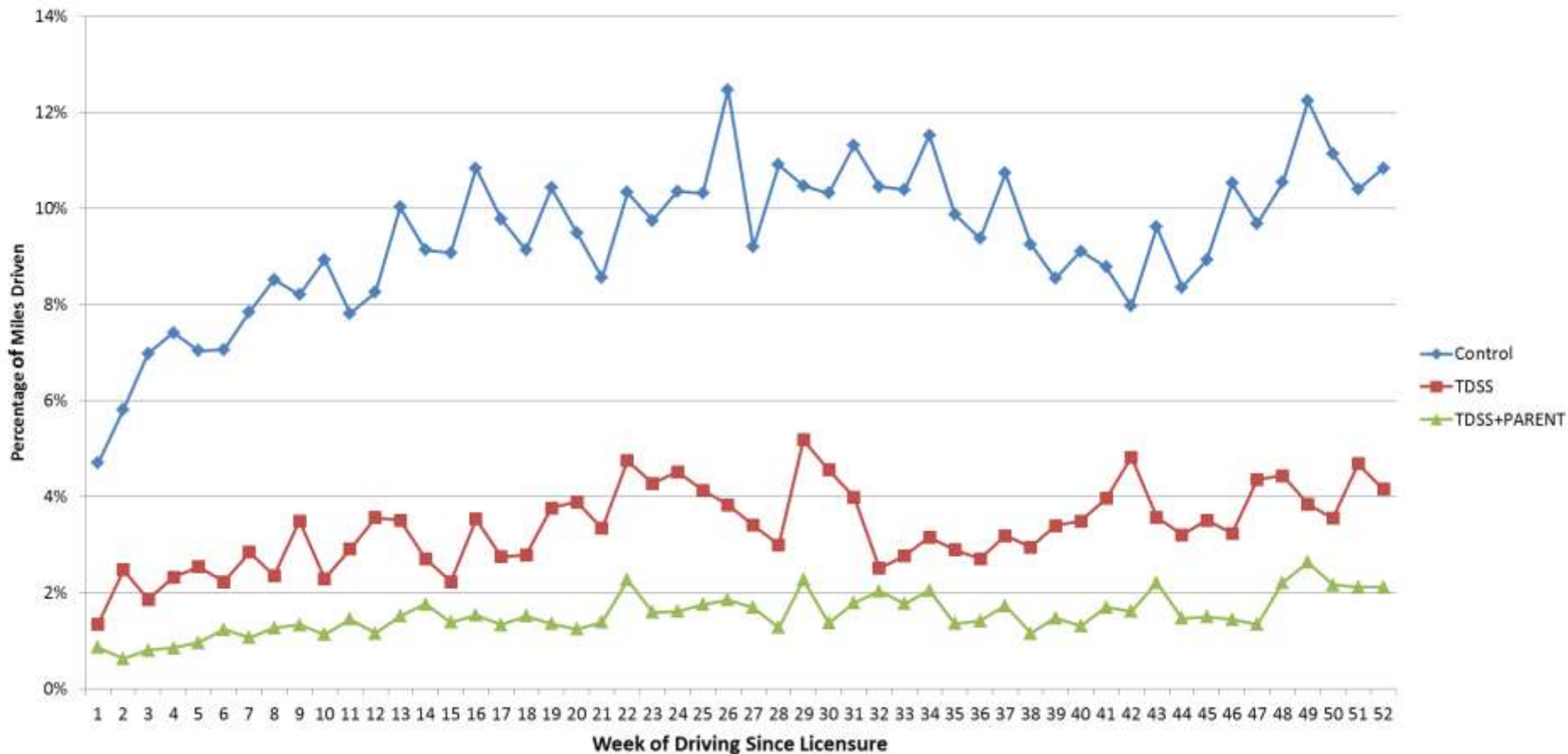


TDSS Field Operational Test

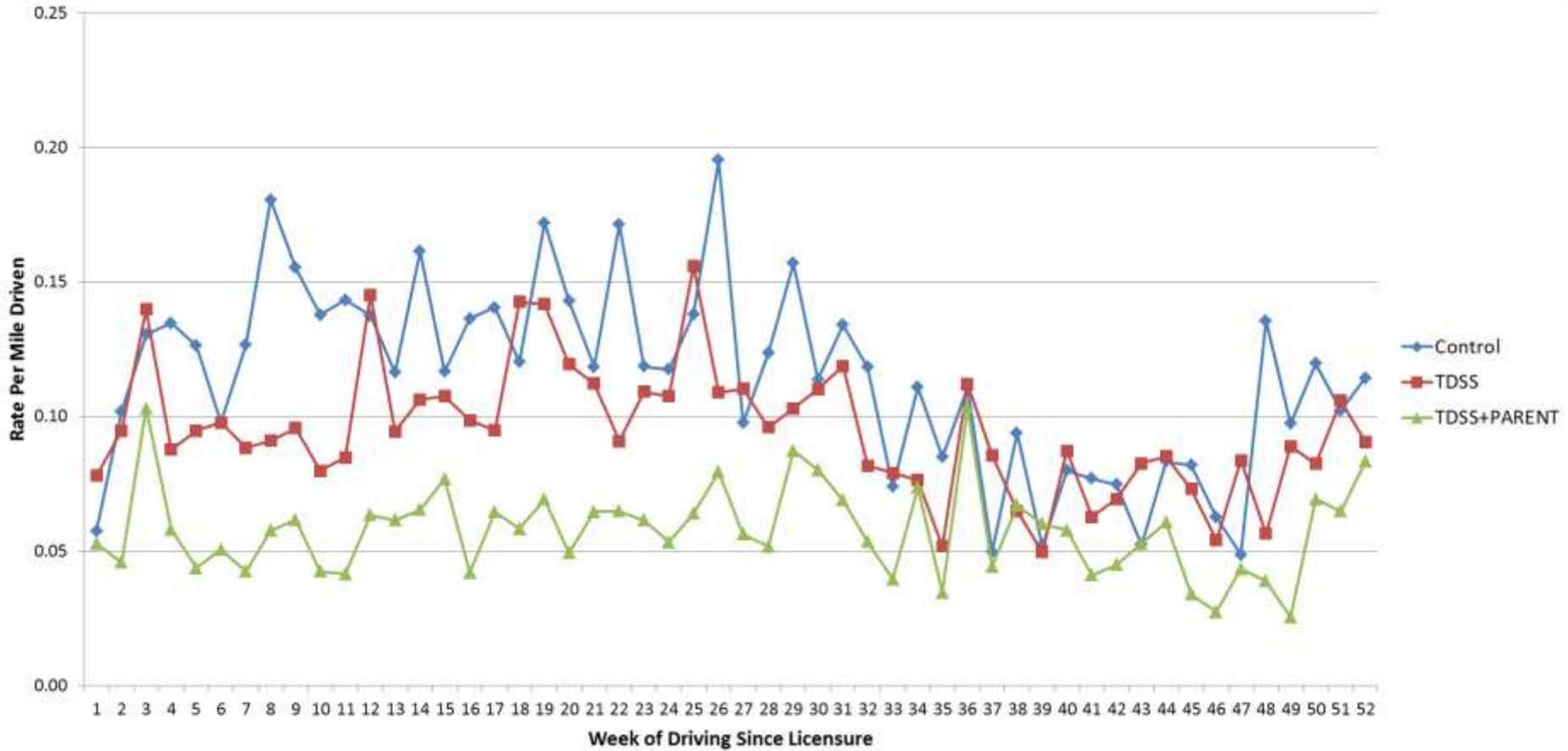
- Recruited 300 newly licensed teens and their parents; assigned to 1 of 3 experimental groups
 1. Control (Naturalistic driving)
 2. TDSS In-vehicle Coaching
 3. TDSS in-vehicle Coaching and Parent Feedback
- Expected risky behaviors to be ***less frequent*** in both TDSS groups
- Expected group with ***parent feedback*** to have the ***lowest rates*** of observed risky behaviors



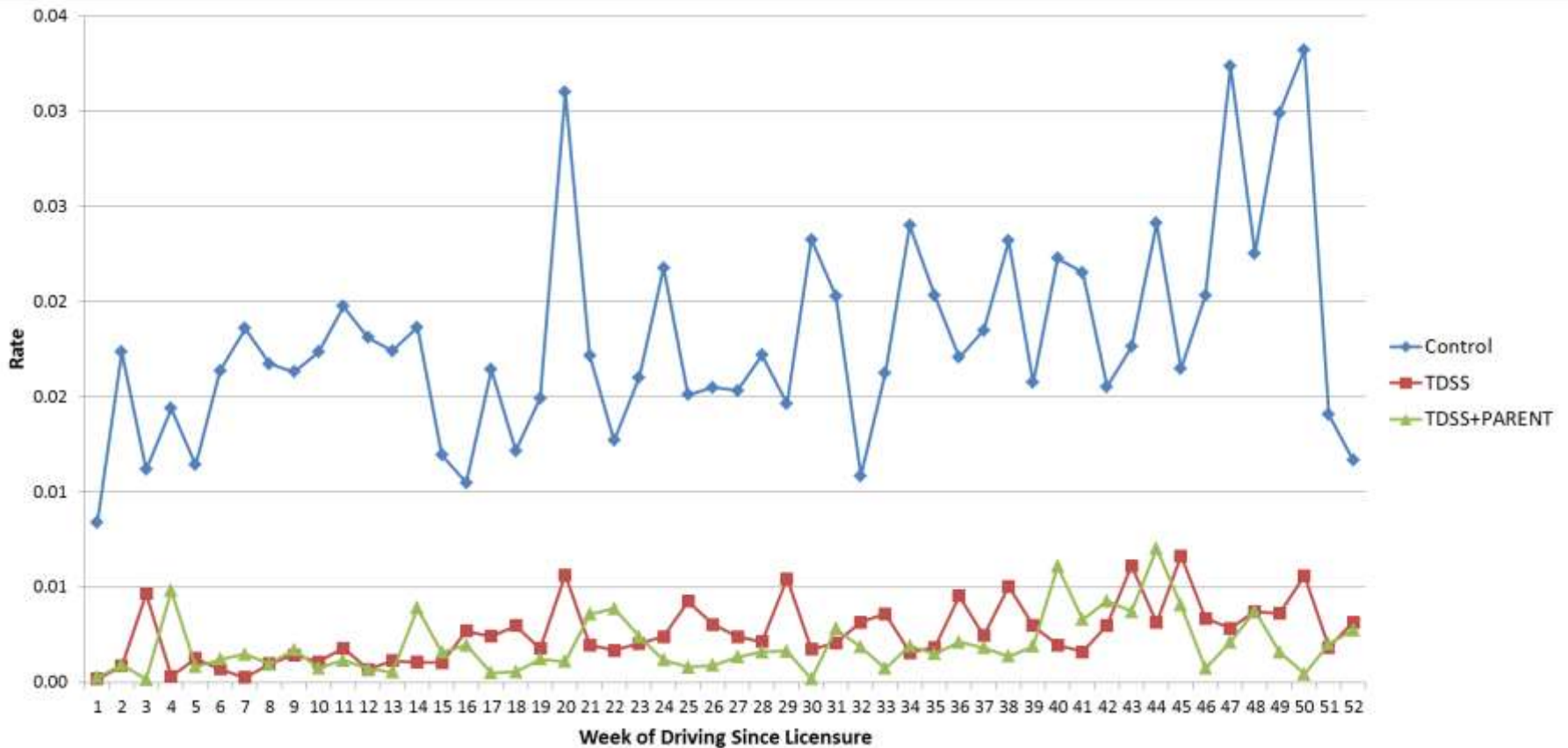
Percentage of Miles Driven 7+ MPH Over Limit



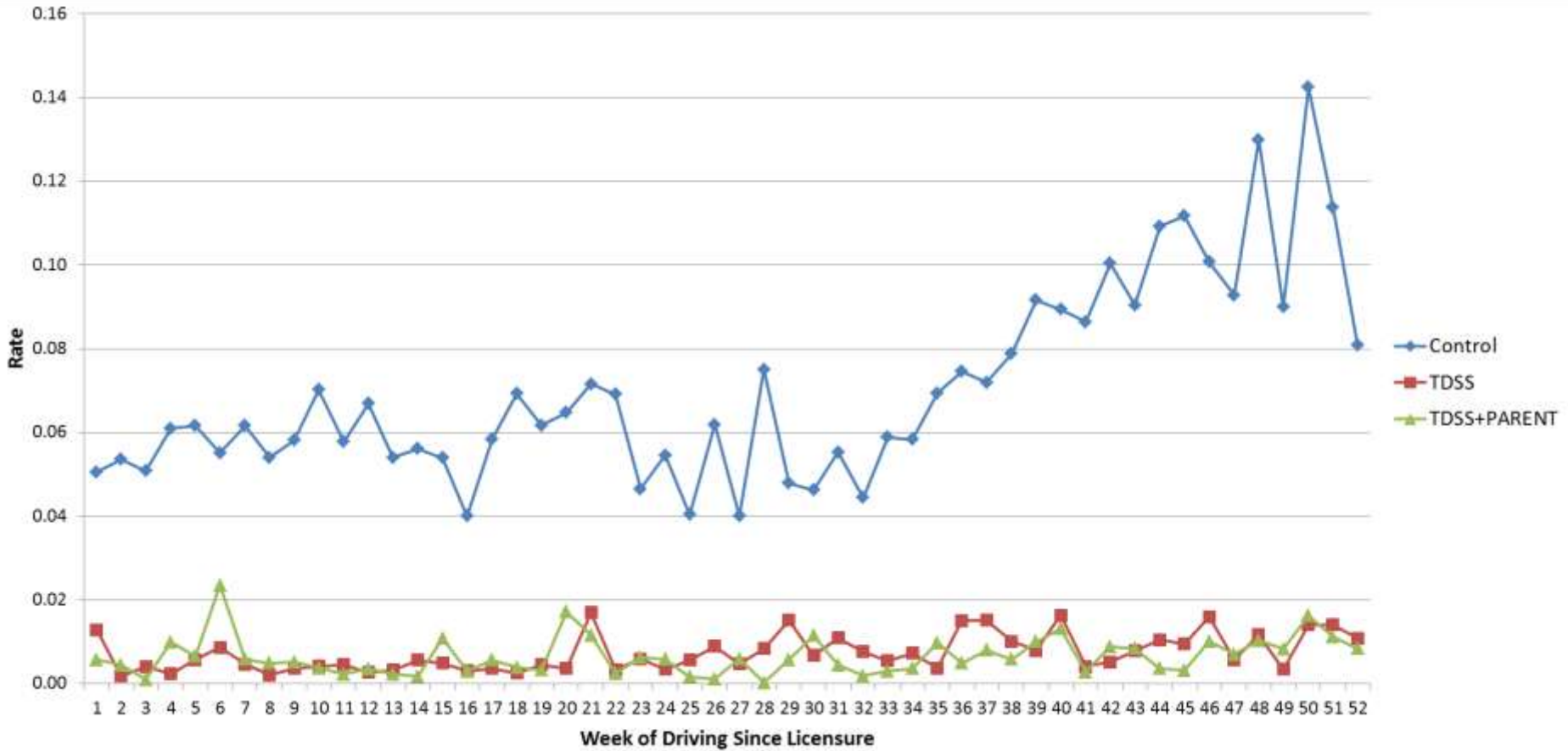
Aggressive Driving



Calls Made Per Mile Driven



Text Messages Sent Per Mile Driven



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Perceptions of the System and its Utility

- Overall, parents had positive opinions (>90%) of the system
- Most parents (>90%) said they would recommend the system to other parents with new teen drivers
- The majority of teens held favorable opinions of the system (60-75%)



Summary

- The TDSS reduced observable risky behaviors in the TDSS groups
- Parents/guardians are critical to teen driver safety
 - Parents want to keep their teens safe, but are often not sure how to achieve this
 - Technology tools can assist them in keeping their children safe on our roads



Implications for Traffic Safety

- These technologies already exist and more are coming to the market
- There are implications related to correct understanding and use of such tools
 - Safety
 - Liability
 - Reliability
- Who else could/should be involved?
 - Insurance companies (?)
 - Regulators (?)
 - Cell phone service providers (?)



Questions?



Future teen drivers!



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