Supporting New Teen Drivers During Independent Driving

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Sponsoring Agency: Minnesota DOT
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
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!