

## **Tracking Down Teens to Track their Driving: A Pilot Study**

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This presentation described a pilot study conducted jointly by the UNC Highway Safety Research Center and TransAnalytics, and funded by the National Highway Traffic Safety Administration (NHTSA). The objectives of the study were to: 1) identify existing technologies that hold promise for measuring teenage driving exposure, and 2) design and conduct a pilot study to investigate the feasibility of using one or more technologies to obtain reliable, valid, quantitative measures of exposure. Under the first task, several technologies were initially evaluated, including OBD-II based technologies, continuous video systems, GPS, personal electronic devices, and others. Advantages and disadvantages of each technology were catalogued. Data elements considered essential for a study of teenage driving exposure included driver identification, trip date/time, trip duration, distance, travel speed, number of vehicle occupants and their seatbelt use. Technologies were also evaluated on factors such as accuracy, reliability, storage capacity, ease of installation, ease of data extraction and analysis, unobtrusiveness, and cost.

Based on these considerations, a hybrid system was developed and pilot tested with a small number of teen drivers (N=8). The technology featured a data logger from Caflor that plugs into the OBD-II port. The data logger was integrated with a camera, which attached to the front windshield, to periodically record images of the passenger compartment. Participants were recruited from a DMV office by one of two approaches: passive recruitment through letters distributed by DMV examiners, or active recruitment by researchers who stationed themselves in the office. The former approach proved more successful – 35% of eligible families who were asked to participate had the data logger and camera installed in their vehicle. The equipment remained in teens' vehicles for a minimum of one month. Overall, the hybrid technology was fairly reliable and quite effective in collecting basic data elements about teenage driving exposure. Many of the difficulties experienced during the pilot study were at least partly the result of human behavior (e.g., interfering with the camera). Inherent limitations of the technology included the inability to identify trip purpose, location of travel, or exposure to different types of roadways and driving situations. Some devices also proved unreliable, failing to record trip information. Implications for a potential large scale study of teenage driving exposure were discussed.