Section B

Introduction

This section provides information about study methods and procedures.

B.1.Respondent Universe and Sampling Methods

A sample of 2000 teen-parent dyads will be recruited from several DMV licensing offices in Rhode Island. The sex and race composition of the sample is expected to closely resemble the composition of the respondent universe. Parent-teen dyads will be eligible to participate in the study if (1) the teen successfully obtains his/her learner's permit and is between the ages of 16 years 0 months and 16 years 9 months and provides assent; and (2) the primary parent or legal guardian who will be involved with his/her driving consents to participate. Study participants will be recruited regardless of sex or race. The race composition from the most recent census of Rhode Island residents included 76% white, 11% African American, and 10% Hispanic/Latino non-white, and 1% Native American, and 2% Asian. Recruitment is expected to parallel these population characteristics. In previous research on this topic conducted in Connecticut, 87% of eligible study participants were recruited, of whom 80% continued to provide data through 12 months follow up. We expect to achieve similar participation rates in the proposed research.

B.2.Information Collection Procedures/Limitations of the Study

This section provides information about sample and statistical power.

B.2.1.Statistical Methodology for Stratification and Sample Selection

The study is a randomized controlled trial designed to determine the effectiveness of the Checkpoints Program when delivered at the time of permit or licensure. Families will be assigned to one of four treatment conditions: (1) the Checkpoints Program at permit; (2) the Checkpoints Program delivered at Licensure; (3) Checkpoints delivered at both permit and licensure; or (4) the comparison condition. The Checkpoints Program includes print materials, a video tape, and a Parent-Teen Driving Agreement (materials included in the attachments). The comparison group will receive materials related to driving, but not to parent management, for example, on vehicle maintenance and what to do in case of a crash. The Checkpoints Program is designed to increase parent limits on the driving conditions under which novice teen are allowed to drive, including the number of teen passengers, night time curfew, and weather and road conditions,

thereby reducing teen driving risk, risky driving behavior, and outcomes. In previous research the efficacy of the Checkpoints Program has been established when materials were delivered through the mail starting at the time of permit and continuing for several months after licensure (Simons-Morton et al., 2002; 2005). The proposed research is designed to evaluate the relative effectiveness of the Checkpoints Program when delivered succinctly at permit or licensure at local offices of the DMV. Thus, this research evaluates the feasibility of implement of The Checkpoints Program at DMV offices and the relative effectiveness of the timing of intervention.

Parent-teen dyads will be recruited from two offices of the Rhode Island Department of Motor Vehicles (DMV) when teens successfully obtain their learner's permits. Rhode Island was selected as the site for this research because it was proposed by the contractor, PRG, Inc., because Rhode Island is within a reasonable commute from Trumbull, CT; good relations have been established over time between PRG, Inc. and the Rhode Island DMV, Rhode Island has appropriate Graduated Driver Licensing requirements, and Rhode Island DMV expressed willingness to participate in this activity. A letter of agreement to participate in this research is included in the attachments. Trained research assistants will recruit subjects at two DMV licensing offices, collect baseline data, and deliver the Checkpoints Program or comparison materials according to treatment group assignment. For those families assigned to the Licensure condition, the DMV has agreed to provide schedule information so that staff can be available to deliver the Checkpoints Program at the time the teens' test for licensure.

B.2.2.Estimation Procedure

We plan to recruit 2000 parent-teen dyads and retain 80% of them over the period of the study, yielding a final sample of 1600 parent-teen dyads, approximately 533 in each of three treatment conditions. Preusser Research Group (PRG), Inc., is responsible for data collection. Parents and teens will complete a brief baseline self report at the time of recruitment and CATI telephone interviews within a few weeks after licensure and at 6-months after licensure.

Variables of interest include parenting practices related to management of teen driving and adolescents' driving behavior and outcomes (see attachments). The primary outcome in this study is parent limits on novice teen driving conditions, which is assessed by parent and teen reports at license and 6-months post-license. The measure of parent limits is a 12-item scale (range = 0-12) that has been used in previous research and which has been found to differ

between intervention and comparison groups (Simons-Morton et al., 2006b; Simons-Morton et al., 2006c) through 12-month follow up. As noted, parent limits on novice teen driving is associated with reductions in risky driving, traffic violations, and crashes (Simons-Morton, et al., 2006a). In an analysis of treatment group outcomes, teens in the Checkpoints Program reported parent limits at licensure with a mean of 4.89 (SD=2.78) and at 6-months follow up with a mean of 2.91 (SD=2.25), while the comparison group mean at license was 4.32 (SD=2.69) and at 6-month follow up the mean was 2.60 (Sd=2.18). These results show significant treatment group differences at licensure and 6-month follow up, despite declines in parent limits in both groups over this period.

Risky driving will be assessed by asking teens many times they drove in the past seven days and of those times, how often they performed each of 19 risky driving behaviors. Items included the following: drove 20 or more miles per hour over the speed limit; purposely tailgated or followed another vehicle very closely; switched lanes to weave through slower traffic; and cut in front of a vehicle to turn (alphas = .90). Scale scores will be used for risky driving at each time point by adding the scores across the 19 behaviors and dividing by the number of trips they reported making as the driver in the past seven days, thus, producing an average number of risky driving behaviors per trip.

At the 6-month survey teens will also asked how many miles they drove in the past week, how many times since getting a license they had been pulled over for a moving violation (range =0-7; mean = 4; SD = .8), and how many accidents they had been involved in as a driver (range 0-8; mean = .47; SD = .71).

B.2.3.Degree of Accuracy Needed for the Purpose Described in the Justification

The research seeks to answer the question, what is the effect of the Checkpoints Program on parent-imposed limits on novice teen driving and driving outcomes assessed at 1-month and 6-months post-licensure. Each of the 3 intervention conditions, Checkpoints at permit, Checkpoints at permit and licensure, and Checkpoints at Licensure only, will be compared with the comparison group. The research also seeks to determine the effect of intervention on the targeted mediators and the relationship between the hypothesized mediators and parent limit setting and adolescent driving outcomes apart from intervention.

The impact of the intervention on targeted mediators will be assessed using t-tests or linear regression adjusted for adolescent gender, age, race/ethnicity, and baseline variables. The effect of the hypothesized mediators on outcomes (controlling for intervention effects) will be assessed by regression analyses.

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B.2.4.Unusual Problems Requiring Specialized Sampling Procedures

This is a randomized controlled trial in which no unusual problems requiring specialized sample procedures are anticipated.

B.2.5.Use of Periodic (Less Frequent Than Annual) Data Collection Cycles

The frequency of three assessments over a period of 12-18 months is a product of the nature of the problem and the study design. The study is interested in the behavior of parents and teens during the first 6 months of driving, when driving risk is greatest and the effects of parental management practices is most important.

B.3.Methods for Maximizing the Response Rate and Addressing Issues of Nonresponse

In our experience most parents and teens who agree to participate in studies of this sort are interested in the subject of teen driving behavior and willing to participate in the survey as long as participation is convenient. To assure that survey participation is maximally convenient we have developed relatively brief questionnaires and attempt to complete the interviews at a time that is convenient for the family. Also, each parent and teen receives a small cash incentive ($20) each time each time they complete a survey. Contact information, including the most convenient times to conduct the phone surveys, is collected as part of recruitment to reduce loss to follow-up. The contractor contacts individuals multiple times during the assessment window to conduct the interview and sets up interview times if the time they call is not convenient. Interview staff are highly trained and skilled at telephone interviewing and are often scheduled to work nights and weekends when families are most likely to be available. In previous research these procedures have enable the

maintenance of 80% of the originally recruited sample through 6-months follow up.

B.4.Tests of Procedures or Methods

The research seeks to answer the question, what is the effect of the Checkpoints Program on parent-imposed limits on novice teen driving and driving outcomes assessed at 1-month and 6-months post-licensure. Each of the 3 intervention conditions, Checkpoints at permit, Checkpoints at permit and licensure, and Checkpoints at Licensure only, will be compared with the comparison group. The research also seeks to determine the effect of intervention on the targeted mediators and the relationship between the hypothesized mediators and parent limit setting and adolescent driving outcomes apart from intervention.
Chi-square and t-test analyses were used to determine differences in family demographics between teens in the intervention group and those in the control group after licensure, and between teens who completed surveys and those who did not. Intervention effects will be assessed using chi-squares and t-tests to assess treatment group differences for driving limits (teen passenger limits, night driving limits, high-speed road limits, and composite scores for driving limits) at 1- and 6-months; and for risky driving violations, and crashes at 6-months.

The impact of the intervention on targeted mediators will be assessed using t-tests or linear regression adjusted for adolescent gender, age, race/ethnicity, and baseline variables. The effect of the hypothesized mediators on outcomes (controlling for intervention effects) will be assessed by regression analyses

Quality control of data collection and management is emphasized. Interview data are obtained mainly through the CATI system, eliminating most data transcription errors. Telephone interviewers are trained by contractor staff, with careful quality control procedures. Also, with the permission of the interviewee, supervising staff listen to a small number of interviews during each interview period to assure fidelity to the protocol. In addition, weekly reports are generated listing the number of families contacted of those scheduled for interviews during that period.

B.5.Names and Telephone Numbers of Individuals Consulted

Actual data collection is the responsibility of the contractors, Preusser Research Group (PRG), Inc., Trumbull, CT, under the leadership of Dr. David Preusser and Dr. William Leaf (203-459-8700). Data analysis is the responsibility of the Project Officer, Bruce Simons-Morton, EdD, MPH, (301 496-5674). Statistical consultation on this project has been provided by Kai Yu, PhD, (301-496-6813), Chief of the Statistic Branch,

within the Division of Epidemiology, Statistics, and Prevention Research.