

Preventing Motor Vehicle Crashes Among Young Drivers

No notes on the title are provided.

Section A

Introduction

The circumstances and need for the research are provided in this section.

A.1.Circumstances Requiring the Collection of Data

Purpose

OMB approval is requested for data collection for a new study designed to test the effectiveness of an educational program designed to facilitate parental management of novice teen driving.

Legislative Authority

The data collection requested is within the legislative authority of the National Institute of Child Health and Human Development (NICHD) under Section 448 of the Public Health Service Act (PHS) as amended (42 U.S.C. 285g) which includes “the conduct and support of research, training, health information dissemination and other programs with respect to...child health,...human growth and development...”

NICHD and PRB Involvement

Prevention Research Branch (PRB) is an intramural research group within the National Institute of Child Health and Human Development (NICHD) that conducts research on child and adolescent health behavior. One research emphasis area of the PRB is risk assessment and prevention of motor crashes among novice teenage drivers.

Need For This Data Collection

Novice young drivers are at greatly elevated risk for motor vehicle crashes, and these risks are particularly elevated during the first 6 months and 1000 miles of independent driving, (McCartt et al., 2003). This may be due to young age, inexperience, risk taking, or other factors. Teen passengers, nighttime, distracting activities, and other factors are associated with increased crash risk for novice teen drivers.

The novice young driver problem does not have a simple solution. Regardless of the amount of supervised practice driving, crash risk for both boys and girls is extremely high at licensure (a novice teen is about 10 times more likely to have a crash the first

month after licensure than an experienced adult over a similar period of time), declines rapidly over the first 6 months and 1000 miles, and then declines at a much slower rate for a period of years (McCartt et al., 2003; Mayhew et al., 2003). Relative to experienced drivers, crash rates remain elevated for teenagers into the 20's, but this research is concerned only with the very dangerous early months of licensure. This pattern of highly elevated risk at licensure with a rapid initial decline is consistent with learning curves common for complex psycho-motor behaviors. With tennis, basketball, skiing, and driving, coaching and supervision can accelerate the rate of learning (and rate of errors), but the most important factor in improvement is actual experience, the amount of independent practice. The more people ski or play tennis the better they become. Similar, the more a novice drives, the better he or she becomes. Supervised practice driving prior to licensure is great for teaching novices how to manage the vehicle, but hazard detection and other aspects of anticipatory driving behavior come only with independent driving experience. Upon licensure teens must on their own for the first time manage the vehicle; traffic conditions; invehicle distraction by passengers, technology and the like; and exert self-control, all things that supervising adults help with when supervising prior to licensure. Hence, the first 6 months or so of independent driving is very dangerous because novices are still learning to drive, explore and test out the vehicle and their driving skill, and are prone to making mistakes. Regardless of their temperament, natural motor skill, or amount of supervised practice driving, novices are at high crash risk. Indeed, novices who quickly learn to manage the vehicle well may be highest risk because they are likely to overestimate their skill in dealing with road and traffic conditions (Simons-Morton, Ouimet, 2006).

There two effective solutions to the novice young driver problem -- Graduated Driver Licensing (GDL) policies and parental management practices. GDL policies, now in place in most states, appear to reduce crash risks mainly by delaying licensure and possibly by reducing exposure to late night driving (McKnight, Peck, 2002). However, GDL policies vary considerably from one state to another and no state has adopted policies consistent with recommendations (IIHS, 1999). Parental management practices, specifically parent imposed limits on high risk driving conditions like teen passenger and late night driving) during the early months of independent driving protects against risk (Simons-Morton, et al., 2006a; 2006b). Unfortunately, while most parents apply some limits on their newly licensed teen drivers, these limits are not very strict and are not sustained long enough to allow teens to develop driving proficiency (Simons-Morton, Ouimet, 2006). The key is for parents to allow their teens to drive for a time after licensure only under less risky driving conditions, such as during the day, with no or few teens passengers, in good weather, and on familiar roads, allowing them time to develop driving proficiency before they are exposed to more complex driving conditions. This is similar to limiting for their own protection young skiers for a time to less dangerous slopes until they have gained a lot of experience.

Previous and Current Data Collections

A previous data collection approved by the OMB (No. 0925-0467) demonstrated that the Checkpoints Program can increase adoption of a parent-teen driving agreement, reduce

exposure to high risk driving conditions, and reduce driving risks during the first 12 months after licensure (Simons-Morton et al., 2002, 2005). However, there remains a need to develop a better understanding about the nature of novice young driver risk and also to determine how best to foster improvements in family management of young drivers. Therefore, the proposed research is designed to determine the effectiveness of the Checkpoints Program when implemented at permit or licensure at local offices of the Department of Motor Vehicle Administration. This research is timely and important. It will provide evidence of the potential to increase parental management of teen driving and use of parent-teen driving agreements, and the degree to which doing so reduces young driver risk. It will provide evidence about the feasibility of implementing this program within the MVA at permit and licensure. This research also has policy implications as state DMV's and insurance companies have adopted or are considering the adoption of parent-teen driving agreements and educational programs to increase parental involvement and control of novice of teen driving. There are no ongoing studies that over-lap with this one.

A.2.Purposes and Uses of the Data

The purpose of the data collection is to evaluate the effectiveness of the Checkpoints Program when delivered at local offices of the state Department of Motor Vehicle (DMV). Study participants will include teens recruited at the time they obtain their learner's permit and one of their parents. Families randomly assigned to the Checkpoints Program, will receive educational materials including The Checkpoints Parent-Teen Driving Agreement, and families assigned to the comparison condition will receive useful materials relevant to driving (such as vehicle maintenance and what to do in case of a crash). Each participating family will be asked to participate in a brief self-report survey at the time of recruitment and in telephone surveys conducted within 1-month after licensure and at 6-months post-licensure. A total sample of 2000 parents and 2000 teens will be recruited. As described in section B.1., this sample is adequate to test the question.

Driving agreements are now being promoted for use with novice teenage drivers by state agencies, insurance companies, and other groups. However, the only available research on the utility of driving agreements (or contracts) has been conducted by the PRB in a previous OMB approved data collection. This research has shown that parents in the Checkpoints Program compared to the comparison group provided greater restrictions on their newly licensed teens and these teens were less likely to engage in risky driving behavior or to have traffic violations (Simons-Morton et al., 2006^a). In previous research the Checkpoints Program was delivered by mail to participating families. The current data collection seeks to determine if similar effects can be obtain when The Checkpoints Program is administered in the logical practice setting of the local offices of the DMV, thus providing a great deal of information about the utility of practice-based delivery of parent education.

A contract has been awarded to Preusser Research Group, Inc. (PRG), of Trumbull, CT, (David Preusser, PI, for this data collection and PRG will be responsible for conducting the surveys and initial management of the data before delivery to the PRB. Data to be collected include teen driving outcomes (e.g., risky driving behaviors, moving violations, and crashes), parental limits on teen driving (e.g., limits on the number of teen passengers allowed, night curfew, and weather and road conditions), and hypothesized mediators (e.g., perceptions about risk and expected benefits of parent limits). A description of the variables of interest and copies of the data collection instruments and included in the Appendices..

Data will be analyzed by PRB researchers at the NICHD and findings will be reviewed for clearance according to procedures, presented at professional meetings, shared with national and state policy groups, and published in scientific journals. Some of the recent presentations and publications based on the previous relevant data collection are included in the Table A.3.1.

Table A.3.1. Partial list of relevant publications and presentations based on previous research on parent management of novice teen drivers.

Recent Publications

Simons-Morton BG, Hartos J, Leaf W, Preusser D. The Effects of the Checkpoints Program on Novice Teen Driving Limits and Outcomes. Accident Analysis and Prevention, 38:907-912, 2006.

Simons-Morton BG, Hartos J, Leaf W, Preusser D. Increasing Parent Limits on Novice Young Drivers: Cognitive Mediation of the Effect of Persuasive Messages. Journal of Adolescent Research, 21, 1:83-105, 2006.

Williams A, Simons-Morton BG, Hartos JL, Leaf WA, Preusser D. Vehicles Driven by teenagers in their first year of licensure. Traffic Injury Prevention, 7: 23-30, 2006.

Simons-Morton BG, Hartos JL, Leaf WA, Preusser DF. The effects of the Checkpoints program on parent-imposed driving limits and crash outcomes among Connecticut novice ten drivers at 6-months post-licensure. Journal of Safety Research, 37: 9-15, 2006.

Simons-Morton BG, Hartos J, Leaf W, Preusser D. Do recommended driving limits affect teen-reported tickets and crashes during the first year of teen independent driving? Traffic Injury Prevention, 7:1-10, 2006.

Simons-Morton BG, Ouimet MC. Parent involvement and novice teen driving: a Review of the literature? Injury Prevention, 12 (Suppl 1): i30-i36, 2006.

Simons-Morton BG, Hartos J, Leaf WA, Preusser D. The Persistence of Effects of the Checkpoints Program on Parental Restrictions of Teen Driving Privileges. American Journal of Public Health, 95(3):447-452, 2005.

Simons-Morton BG, Lerner N, Singer J. The observed effects of teenage passengers on the risky driving behavior of teenage drivers. Accident Analysis & Prevention, 37(6), 973-982, 2005.

Recent Presentations

Simons-Morton BG. Parents and Teen Driving. National Academy of Science, Institute of Medicine, Board on Children, Youth, and Families, Committee on The Contributions from the Behavioral & Social Sciences in Reducing and Preventing Teen Motor Crashes. Washington DC, 5/15-16/2006.

Simons-Morton BG. Effects of the Checkpoints Program on Parent-Imposed Driving Limits and Crash Outcomes Among Novice Teen Drivers at 6-Months Post-Licensure. Annual meeting of the American Public Health Association, Philadelphia, 12/11-14/2005.

Simons-Morton BG. Teen Driving. Annual Meeting of the American Academy of Pediatrics, (invited), Washington DC, 10/9-12/2005.

Simons-Morton BG. Parental Management of Novice Young Drivers: Is It Possible? Does it Matter? Asso for Advancement of Automotive Medicine (Invited), Boston, 9/12-15/2005.

Simons-Morton BG. Attitudes and practices regarding parental management of teen drivers – implications for the acceptability and use of electronic monitoring devices.” Presented as part of the workshop entitled “Should teenagers be electronically monitored? Transportation Research Board Annual Meeting, (invited), Washington DC, 1/9-13/2005.

Simons-Morton BG, Jessica Hartos. “Promoting Parental Management of Young Drivers.” International Conference on Traffic & Transport Psychology, Nottingham, UK, 9/5-9/2004.

A.3. Use of Information Technology To Reduce Burden

As required in 5 CRF 1320.5(a)(1)(iii) and 5CFR 1320.9(j), the investigators researched technological advances that might reduce participants' response burden. Computer Assisted Telephone Interview (CATI) technology was deemed most appropriate for study purposes. Except for the brief baseline assessment at the DMV, the parent and teen interviews are to be administered by CATI operators. The data are automatically recorded by the interviewer and stored in computer files. Interviews are at no expense to the participants and take less than 30 minutes to complete. Our previous experience with telephone assessments of consenting participants was highly effective, with over 80% participation rates through 6 months follow up.

A.4.Efforts To Identify Duplication

Literature reviews and consultation with outside experts and agency representatives from the Centers for Disease Control and Prevention, the National Institutes of Health, and the Department of Transportation identified no overlapping data collections. Our data collection is unique in that it employs a prospective study design with questionnaires have been developed specifically to address specific study objectives, including parental restrictions on teen driving, hypothesized mediators of these behaviors that will be addressed by the intervention, and other variables that may help explain the outcomes. Data collection goals and objectives have been coordinated with the Department of Motor Vehicles (DMV) in Rhode Island and do not represent a duplication of state activities.

A.5.Small Business

No small businesses are involved in this study.

A.6.Consequences of Not Collecting the Information

The design calls for conducting a brief self report assessment at the time of recruitment (at the time of permit at Department of Motor Vehicles licensing offices), and telephone interviews 1 month and 6 months after teen licensure. The baseline self report will allow for confidential collection of pre-treatment information while families are at the licensing office. It was determined that interviews and computer-assisted approaches to this data collection would be less efficient than self report. The post-license interviews provide information about teen and parent perceptions and attitudes and driving limits and driving performance. This is the minimum frequency of data collection consistent with the objectives and study design. Accurate and current information at these time points are necessary because teen driving privileges and experiences may change rapidly over the first year of driving.

A.7.Special Circumstances Justifying Inconsistencies with Guidelines in 5 CFR 1320.6

This research study fully complies with 5CFR1320.6.

A.8.Consultation Outside the Agency

a.) Federal Register Notice for Public Comments

The original 60-day notice soliciting public comments about this study was published in the Federal Register on June 13, 2006, pages 34142.-34143. No public comments were received.

b.) Review by Outside Experts and Agency Representatives

Experts were recruited to form the Concept Review Group, which met in a teleconference on 03/10/2004 and endorsed this project prior to issuance of the Request For Proposals. Proposals were reviewed by a separate expert review panel on May 16, 2005. PRG, Inc. received a favorable score, was included in the competitive range, and after negotiations was awarded the contract. The list of expert panel participants is provided in the attachments.

A.9. Payments or Gifts to Respondents

Parent and teenage respondents receive \$20 cash each time they complete an assessment. This amount is consistent with the NICHD guidelines for providing incentives for participating in data collection. In previous work we have found that an incentive of this value was associated with participation rates of over 80% of teens and parents. In our experience, parents and teens who agree to participate in the study are generally interested in this topic and willing to respond to surveys of this nature. Hence, we believe this small incentive is sufficient to induce many parents and youth to participate in the survey; however, it is not so great as to force anyone to participate against their will.

A.10. Assurance of Confidentiality

Study participants are assured that the data collected will be safeguarded closely and that actions will be taken to protect confidentiality. The data are coded and stored without personal identifiers in a locked filing cabinet maintained by the contractor(s). The Contractor is responsible for maintaining in a separate, locked cabinet, a list linking each coded source of data with personal identifiers. Data analyzed by the NICHD investigators is not linked to personal identifiers. Only aggregated results are reported. The contractors have been involved in other federally funded research projects and have developed standard procedures for assuring the quality and confidentiality of data. The contractors procedures for confidentiality are included in the attachments

a.) Privacy Act

The name of the Privacy Act System is Biomedical Research: Records of Subjects in Biomedical and Behavioral Studies of Child Health and Human Development, HSS/NIH/NICHD (system number 09-25-2000).

b.) Institutional Review Board and Consent Procedures

The protocol has been reviewed and approved by the NICHD IRB. Teen and parent study participants are informed about the goals and requirements of the study by a trained research assistant. Parents provide written consent and assent for the teen to participate and the teen provides written assent to participate. The study participants have an opportunity to ask questions at that time they are recruited and are provided with the telephone number of a responsible official they can call if they have questions at any time during the study. Respondents can refuse to participate or withdraw from the study at any time. The valid IRB approval and confidentiality procedures are included in the attachments.

A.11. Questions of a Sensitive Nature

Randomized trials such as this one require that data be collected on the same individuals over time; hence, it is not possible to collect information anonymously. Some potentially sensitive data are collected, including teen participants' reports of the frequency of risky driving behavior, moving violations, motor vehicle crashes, alcohol use, and drinking and driving. This information is needed to evaluate the study outcomes.

Upon recruitment, study participants are explained the purposes of the study and the nature of the questions that will be asked. Parental consent and adolescent assent is obtained according to the procedures approved by the NICHD Institutional Review Board. Maintaining the confidentiality of data collected is important, both to protect the right of subjects' privacy and to assure honest reporting.

A.12. Estimates of Response Burden

This section provides estimates of response burden.

A.12.1. Number of Respondents, Frequency of Response, and Annual Hour Burden

The estimated annual response burden for collecting the information in the entire study is listed in Table A.12-1. A total of 2000 parent-teen dyads, i.e., 4000 study participants (A), are to be recruited in Rhode Island; (B) Teen and parent participants are to provide data three times over about a 12-18 month period; (C) the average time to completion of each assessment is 20 minutes (the initial self report at the time of recruitment takes up to 10 minutes and the two telephone interviews take up to 25 minutes each to complete);

(D) the 3-year burden is 2100 hours for teens and 2100 hours for parents; (D) the annual hourly burden is 1050 hours for teens and 1050 for parents; and (F) with an expected 70% completion rate the burden would be 840 hours for teens and 840 for parents for a total of 1680 burden hours.

Table A.12-1. Estimated Annual Hour Burden of Information Collection

	A	B	C	D	E	F
Type of Respondent	Number of Respondents	Frequency of Response	Average Time per Response	2-Year Hour Burden (A)(B)(C)	Annual Hour Burden (D)/3	80% COMPLETE (E)(.80)
Teens	2,000	3	.35 hours	2100	1050	840 hours
Parents	2,000	3	.35 hours	2100	1050	840 hours
Total	4,000	--	--			1680 hours

A.12.2.Hour Burden Estimates by Each Form and Aggregate Hour Burdens

As shown in Table A.12-1 three responses are being requested of each respondent with an average time per response of 20 minutes for a total burden of 1050 hours for teens and 1050 for parents. Assuming a completion rate of 80% the burden would be 840 for teens and 840 for parents for a total burden of 1680 hours.

A.12.3.Estimates of Annualized Cost to Respondents for the Hour Burdens

As shown in Table A.12-2, the hourly cost to the respondents (G) is estimated to be \$10 per hour (H). The annual Respondent Cost (I) is \$10,500 for teens and \$10,500 for parents for a total of \$21,000. With an expected completion rate of 80% the burden (J) would e \$8,400 for teens and \$8,400 for parents for a total of \$16,800.

Table A.12-2. Estimated Annual Cost Burden of Information Collection

Type of Respondent	G Annual Hour Burden (E)	H Hourly Cost	I Annual Respondent Cost (G)(H)	J 80% COMPLETE (I)(.80)
Teens	1050		\$10,500	\$8,400
Parents	1050	\$10	\$10,500	\$8,400
Total	2100	\$10	\$21,000	\$16,800

A.13. Estimate of Total Capital and Startup Costs/Operation and Maintenance Costs to Respondents or Record Keepers

There are no capital costs, operating costs, and/or maintenance costs to report.

A.14. Estimates of Costs to the Federal Government

a.) Contract Costs

NICHD has contracted with Preusser Research Group (PRG) in Trumbull, Connecticut, to conduct the study. The total funding over a 3-year period **\$908,389** average annual expense of **\$302,796**. Estimated average annual contract expenses by category are included in Table A.14-1.

Table A.14-1 Contract Costs by Category

Category	PRG
Direct Labor	\$124,855
Indirect Costs	\$106,127
Travel	\$7,824
Subcontracts/Consultants	\$280,027
Participant Incentive	\$240,000
Other Direct Costs	\$41,050

Category	PRG
General and Administration	\$65,365
Total Costs	\$719,017
Fixed Fee	\$43,141
Total	\$908,389

b.) Annual Costs to NICHD

The NICHD principal investigator devotes 20% time and one post-doctoral staff member is tasked to the study at 100% effort. The estimated annual cost of federal employees working on the project including salary and fringe benefits is \$81,200. Local travel expenses for these investigators are estimated at \$4000 per year. Total annual federal employee expenses, including salaries and travel, are estimated to **\$85,200**.

c.) Total annual costs to the Government

The estimated total annual costs to the government, adding the costs from A.14 (a) (**\$302,789**) and A.14 (b) (**\$85,200**) equal a total annual cost to government of **\$387,989**.

A.15.Changes in Burden

This is a new data collection.

A.16.Plans for Publication, Analysis, and Schedule

Data will be analyzed to determine the predictors of teen driving outcomes, effects of parental management of teen driving, and effectiveness of the intervention, comparing treatment and comparison conditions. The primary research questions follows: Compared with teens randomized to the information-only control group, during the first year of licensure did teens randomized to the Checkpoints Program experience more parent-imposed limits on their driving, less risky driving behavior, and fewer traffic violations? Secondary research questions include the following: 1) To what extent do parents restrict the driving of their teens during the first year of licensure? 2) Which baseline factors predict greater parental restriction of teen driving during the first year of driving? 3) Which baseline factors are associated with risky driving, citations, and crashes at 12-months post licensure? 4) To what extent do parental restrictions on teen

driving during the first year of licensure protect against risky driving, citations, and crashes?

The results of this data collection will be disseminated through presentations at scientific meetings and workshops and written reports, journal articles, and book chapters.

a.) Project Timeline

The overall project timeline and remaining schedule are listed in Table A.16-1.

Table A.16-1 Project Time Schedule

Activity	Time Schedule (months)
Recruit study participants	1-6
Conduct baseline survey	1-6
Provide Checkpoints or comparison materials and activities	1-12
Conduct survey at licensure	6-24
Conduct survey at 6-months post licensure	12-30
Analyze data and prepare reports and papers	30-36

A.17.Approval to Not Display Expiration Date

The OMB expiration date will be displayed appropriately.

A.18Exceptions to Item 19 of OMB Form 83-I

No exceptions requested. On behalf of this Federal agency, I certify that the collection of information encompassed by this request complies with 5 CFR 1320.9.