INSURANCE INSTITUTE
FOR HIGHWAY SAFETY

July 25, 2012

The Honorable David L. Strickland
Administrator
National Highway Traffic Safety Administration
1200 New Jersey Avenue, SE
Washington, DC 20590

Request for Comments; National Automotive Sampling System; Docket No. NHTSA-2012-0084

Dear Administrator Strickland:

The Insurance Institute for Highway Safety (IIHS) welcomes the opportunity to comment on the National Highway Traffic Safety Administration's (NHTSA) National Automotive Sampling System (NASS) data modernization efforts. The NASS data systems are important tools in IIHS's work and we appreciate the agency's intention to improve these systems for future needs.

IIHS frequently uses the NASS General Estimates System (GES) and Crashworthiness Data System (CDS) to evaluate progress and identify priorities and opportunities to improve highway safety. A recent example is using GES data to document that drivers are three times as likely to die in side crashes of vehicles rated poor by IIHS compared with vehicles rated good (Teoh and Lund, 2011). IIHS's new front crashworthiness evaluation test, which is based on results in a small overlap crash against a rigid barrier, was inspired by a detailed examination of CDS cases involving serious injury and fatal crashes of vehicles rated good in IIHS's original front crashworthiness rating program (Brumbelow and Zuby, 2009). Other important IIHS research using NASS databases compared injuries to booster-age children across different restraint scenarios (Kirley et al., 2009) and the prevalence of airbag nondeployments in fatal crashes (Braver et al., 2010). As these examples indicate, IIHS recognizes the value of NASS databases and expects the utility of the current system to extend into the future.

Our principal concern is that both CDS and GES continue to serve the purposes they have served to date. GES, which is a sample of police accident reports (PAR), provides a valuable snapshot of the characteristics and circumstances of crashes on our nation's roads. As discussed below, we have some suggestions for improving GES. The chief benefit of CDS is the extensive detail collected from each crash. It is the only sample of reasonable size with details about the postcrash conditions of vehicles and information about specific injuries sustained by occupants. As such, it is an important resource for understanding injury causation and the efficacy of vehicle structures and restraint systems in preventing injury. IIHS believes the same kinds of information currently derived from GES and CDS also will be relevant to future highway safety questions. We recommend that the elements in the current datasets be retained in the modernization and that the samples remain at least as large as the current ones.

Accessibility to NASS data files has improved over time. In particular, the availability of database files for both GES and CDS is critical to IIHS's ability to conduct data analyses. Although these database files consist of several relational files for each year, the overall number of relational files is small. Care should be taken not to increase the number of these files dramatically in future versions. The CDS case viewer is the best way to access details of a specific crash. It is essential to our work that these resources continue to be provided. Changes to enhance the flexibility of the CDS online case query tool also would be welcome (e.g., wider array of search options, ability to download query results as tables).

IIHS understands that NHTSA is contemplating the replacement or augmentation of CDS with on-the-spot (OTS) data collection to better support research about crash causation and crash avoidance. We understand the potential benefits of OTS data collection regarding the documentation of the postcrash

positions of vehicles, on/off status of crash avoidance technologies, as well as interviews of involved drivers and witnesses before passing time clouds their memories. However, we are skeptical that the current CDS sample size is sufficient to support definitive research on crash avoidance technologies during the next several years because of the scarcity of the technologies in the U.S. vehicle fleet. Moreover, we understand that it may be necessary to decrease the sample size to accommodate collecting more information per case. Doing so would reduce the utility of CDS to examine crashworthiness issues, and we strongly recommend against any downsizing of the CDS sample. The need to get to the scenes of crashes also may bias the sample, for example, toward more serious crashes. Furthermore, based on the driver and witness interview data contained in the Large Truck Crash Causation Study (LTCCS), there may be large proportions of missing data for many of the variables. Even where data on interviews are complete, we question the objectivity of first-hand accounts that may be tainted by defensive posturing of responsible parties or the trauma of being involved in a crash. Although we are not completely opposed to collecting OTS data, we strongly urge NHTSA not to add such data at the expense of crashworthiness and injury data elements or sample size.

IIHS does recognize the need to better understand the effects of various new crash avoidance technologies on crashes that do occur. NASS can provide valuable insight into the effectiveness of the technologies in mitigating crashes, their performance in various situations, and even driver use (e.g., whether system turned on, settings used). Consequently, we urge NHTSA to put a priority on obtaining information about the presence of crash avoidance technologies for all vehicles represented in both databases. Information about which vehicles are equipped with various crash avoidance technologies can be linked to the vehicle identification numbers (VINs) only through cooperation with automakers. Our experience suggests that automakers are willing and able to provide such information for vehicles sold in the United States (IIHS, 2012). We also suggest that follow-up interviews with drivers in CDS crashes include questions about the status of crash avoidance systems prior to the crash.

Other suggestions for improving NASS:

- IIHS agrees that national representativeness is an important feature of NASS databases. Any effort to ensure the samples better track demographic changes over time is warranted. For example, PARs could be sampled from each state rather than relying on a sample from a few geographic areas to achieve national representativeness.

- Changes to NHTSA's data systems need better documentation than in the past. For example, NHTSA needs to indicate clearly when it is appropriate to map new or changed variables to variables in the prior system and should describe the specific mapping protocols. This will greatly enhance the ability to do appropriate historical analyses using the old and redesigned systems.

- IIHS recommends that NHTSA provide explicit instructions, programs, or data elements for linking cases from CDS and GES with cases from the Fatality Analysis Reporting System (FARS), Crash Injury Research Engineering Network (CIREN), and state crash files to enhance the possibilities for analyses that leverage the different strengths of each dataset.

- IIHS also recommends that NHTSA develop a management and funding structure for NASS that facilitates temporary augmentations of the basic data collection to focus on special studies and that permits funding in whole or in part from manufacturers, academia, and other non-NHTSA entities. LTCCS, for example, was particularly useful for its focus on heavy truck crashes (Brumbelow, 2012; Brumbelow and Blanar, 2010). Unfortunately, special studies have been infrequent and in some cases occurred only because of legislative directive. IIHS believes that such studies are important enough that they should be a regular feature of the NASS structure. NHTSA should consider special

studies focusing, for example, on crashes involving large trucks, pedestrians, and vehicles with crash avoidance technologies.

- Larger samples than currently available in GES would better support analyses of subsets of the dataset, for example, older or teenage crash-involved drivers.

- IIHS recommends that NHTSA undertake additional steps to ensure the accuracy of VIN information in GES. One possibility would be to check VIN validity at the point of PAR sampling and replace PARs with erroneous VINs with alternate crashes matched on key crash characteristics including valid VINs. Several VIN decoding programs, including the Highway Loss Data Institute's VINdicator, support internet decoding that could be accessible to data collectors via mobile devices.

- IIHS recommends that NHTSA continue supporting the development of a national surveillance system for crashes involving children such as the National Child Occupant Special Study (NCOSS), which is essential to making improvements in restraint systems for children.

- The agency should strengthen efforts to photograph vehicles, child safety seats, and crash scenes for cases in CDS. These photos are among the most valuable information in the dataset. Obtaining pictures of the vehicles at the scene may be achievable by partnering with local authorities, providing cameras if necessary, to collect photographs that augment those obtained later by investigators.

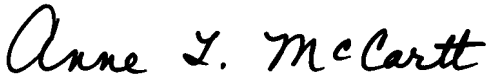
- The current methods used to calculate crash severity in terms of velocity change (delta-V) have significant limitations resulting in inaccurate crash severity estimates in many real-world circumstances (Niehoff and Gabler, 2006; Sherwood et al., 2010). More rigorous reconstruction efforts accounting for vehicle-specific stiffness values, and coding the specific structural elements involved in an impact, would result in more accurate estimates of crash severity.

- To avoid a potentially confusing transition associated with changes to CDS, IIHS would support a cessation of data collection to expedite implementation of any new system in its entirety that results from this modernization effort.

Summary

IIHS supports NHTSA's efforts to improve NASS and appreciates the opportunity to provide comments in support of that goal. We urge the agency not to sacrifice the current datasets or sample sizes to achieve insight into other highway safety issues, but we would support augmenting the systems to this same end. The rapid introduction of advanced vehicle technologies necessitates collecting information about the presence and status of advanced vehicle technologies when they are present on vehicles in NASS databases. Other priorities include maintaining the public availability of GES and CDS data in both database file and online access formats, obtaining better photographs for all cases in CDS, improving CDS delta-V estimates, and continuing development of a national surveillance system on crashes involving children and the conduct of other special studies.

Sincerely,



Anne T. McCartt, Ph.D.
Senior Vice President, Research

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