Objective for this Presentation:

- Provide a foundation for the discussion of *Accelerating Progress to Reduce Alcohol-Impaired Driving Fatalities*.

- We have coordinated this presentation in 3 Parts:
  - Tara Kelley-Baker will describe data sources for the Study.
  - Bob Voas will describe the system of programs presently in place.
  - Jim Fell will describe the opportunities Identified by experts at the 2016 Summer Conference of the TRB Committee on Alcohol Drugs and Traffic Safety.

- Limited time will permit only a brief description of the material but copies of the slides have been provided to assist in responding to your questions.
Available Data for Impaired Driving Assessment

Presented to the National Academies Committee on Accelerating Progress to Reduce Alcohol-Impaired Driving Fatalities

March 22, 2017

Tara Kelley-Baker
State and Local Level Data

- DUI arrest/conviction data
  - Very few states have DUI tracking systems linking DUI arrest, prosecution, adjudication, and sanctions imposed.
  - Generally have to acquire from individual jurisdictions.

- DMV/MVA driver records
  - Information about traffic crashes and convictions, suspensions, revocations, etc.
  - States have different systems making it difficult to harmonize (information recorded, how long file is maintained, etc.).
  - Driver records systems are not built for research.

- Vehicle registration files
  - Information about vehicle (owner, VIN, year, make, model).
  - Safety features of interest (rear cameras, automated cruise control).
  - Nothing alcohol-related.
State and Local Level Data

- Police crash reports
  - Generated by investigating officer.
  - Good for assessing crash rates (frequency of crashes, general risk level in the states which vary considerably).
  - Seldom has BAC, mostly observed alcohol or drug presence.

- Emergency department and Trauma center data
  - Discharge data informs about injury type, severity, and presence of alcohol.
  - Codes motor vehicle crashes as the reason for injury.
  - Alcohol is underreported as presence of alcohol may prevent insurance payment.

- NHTSA Crash Outcome Data Evaluation System (CODES)
  - State-based program (in select sites only).
  - Uses probabilistic linkage to combine information from motor vehicle crash reports and hospital records, and sometimes emergency medical services, and death certificate.
  - For select cases and only certain trauma centers.
  - Has alcohol if in the discharge report.
State and National Population Surveys

- **CDC Behavioral Risk Factor Surveillance System (BRFSS)**
  - National and State level surveys collecting data on health related behaviors, chronic health conditions, and use of prevention services.
  - Include items relating to alcohol consumption and drinking and driving.
    - During the past 30 days, how many times have you driven when you’ve had perhaps too much to drink?

- **CDC Youth Risk Behavioral Surveillance System (YRBSS)**
  - A local and national school-based survey conducted by CDC and state, territorial, and local education and health agencies and tribal government.
  - Items relating to alcohol consumption, drinking and driving, and riding with a drinking driver.
    - During the past 30 days, how many times did you ride in a car or other vehicle driven by someone who had been drinking alcohol?
    - During the past 30 days, how many times did you drive a car or other vehicle when you had been drinking alcohol?
National Population Surveys of Interest

- **NIAAA’s National Epidemiologic Survey on Alcohol and Related Conditions (NESARC)**
  - Longitudinal study (aged 18+) started in 2001 (first wave). The third wave was conducted in 2012-2013.
  - Drinking and driving items.
    - More than once drive a car or other vehicle WHILE you were drinking.
    - More than once drive a car, motorcycle, truck, boat, or other vehicle AFTER having too much to drink.

- **NIDA’s Monitoring the Future**
  - Survey assesses changes in beliefs, attitudes, and behaviors of young people (8th, 10th, and 12th) in U.S.
  - Includes items related to AOD use.
    - During the last two weeks, how many times have you driven a car, truck, or motorcycle after ... drinking alcohol? ... having five or more drinks in a row? ... smoking marijuana? ... using other illicit drugs?
    - During the last two weeks, how many times (if any) have you been a passenger in a car ... when the driver had been drinking? ... when you think the driver had 5 or more drinks? ... when the driver had been smoking marijuana? ... when the driver had been using other illicit drugs?
National Population Surveys of Interest

- SAMSHA’s National Survey On Drug Use and Health (NSDUH)

  - Annual cross-sectional survey, ages 12 and older. The survey has received several updates over time, with some relevant questions changing over time. Questions relevant to impaired driving in the 2005 Survey (not sure if changed recently):
    - During the past 12 months, have you driven a vehicle while you were under the influence of a combination of alcohol and illegal drugs used together?
    - During the past 12 months, have you driven a vehicle while you were under the influence of alcohol only?
    - During the past 12 months, have you driven a vehicle while you were under the influence of illegal drugs only?
National Level Data - Non Traffic Specific

- FBI statistics - Uniform Crime Reporting
  - Contains arrests for Driving Under the Influence (DUI) and is generally used for tracking numbers by State.
  - Small police agencies tend not to report DUI arrests to FBI.
  - FBI attempts to impute for this.
  - Does not differentiate DUI from alcohol and other drugs.

- NIAAA Per Capita Alcohol Consumption
  - Findings are based on alcoholic beverage sales data, collected from the States or the National Alcohol Beverage Control Association by the Alcohol Epidemiologic Data System (AEDS), and various reports produced by beverage industry sources.
  - Does not include details such as age, gender, etc.
National Level Data - Traffic Specific (no alcohol measures/used as exposure measures)

- FHWA Vehicle Miles Traveled (VMT)
  - Measurement of miles traveled by vehicle and used to “control” for driving exposure.
  - Estimated from gas tax.
  - No age or gender information.
  - No alcohol use related information.

- FHWA National Household Travel Survey (NHTS)
  - Tracks all type of travel.
  - Sample of drivers use diary to examine trip/travel information (i.e., time of day, where they are traveling, etc.).
  - Conducted every 4+ years, sometimes 8 years.
  - In-between years must be extrapolated.
  - No alcohol use related information.
National Level Data - Traffic Specific (includes alcohol)

- NHTSA General Estimate System (GES)
  - Nationally representative sample of police-reported motor vehicle crashes of all types from minor to fatal.
  - Identify traffic safety problem areas, and provide a basis for regulatory and consumer initiatives, and cost benefit analyses of traffic safety initiatives.
  - Alcohol and drug involvement are based on police reports and is underreported.
  - Could benefit from an imputation method for alcohol.
National Level Data - Often Used

- **NHTSA Fatality Analysis Report System (FARS)**
  - National data collection system that contains information on all known motor vehicle traffic crashes in which there was at least one fatality (1975 to present).
  - Good measure for alcohol as it includes BAC and/or imputation for BAC.
  - Includes zip code which allows matching with census data.
  - Only recently have been including drugs and state participation rates are limited and analytical techniques across states vary.
  - FARS is merged with the Multiple Cause of Death (MCOD) file to obtain certain demographics on the deceased person. (Note: Some states don’t allow this merging).

- **NHTSA National Roadside Surveys (NRS)**
  - Estimate the prevalence of drinking and driving on U.S. roadways using biological measure (BrAC).
  - Can be used to assess injury and fatality risk related to impaired driving (i.e., relative risk studies).
National Roadside Surveys (NRS)

- Stratified random sample of weekend nighttime drivers in contiguous 48 States.
- Voluntary and anonymous. Collects data directly from drivers on the road.
- Several self-report measures about general and evening related driving and drinking/drugging behavior as well as in-time biological measures.
  - Evening plans - Where traveling and returning to and information about passengers
  - Past behaviors - Prior drinking and driving events
  - General attitudes - Risk associated with AOD use
  - Clinical assessments - AUD/DAST
- 2013-14 7,000+ nighttime drivers participated (almost 10,000 including daytime drivers).
  - 2007 and 2013-14 collected data during the day and on drug use
Comparison of FARS and National Roadside Survey Drivers With BAC/BrAC ≥ .08 g/dL on Weekend Nighttime
Relative Alcohol Crash Risk (case-control studies)
Blomberg et al., 2005
National Roadside Surveys

- The House of Representatives has recently been inserting a prohibition on use of appropriated funds for this type of data collection.

- Example from FY 2016 House Report (114-129) accompanying the FY 2016 Budget Bill -
  - “The Committee continues a provision that prohibits funding for NHTSA’s national roadside survey.”

- No budget for FY 2017 so far, there has been no report issued by the House of Representatives.

- When Congress approves a full scale year Continuing Resolution, the House will issue a report explaining the bill. House intends to add the phrase “similar studies.”
  - i.e., likely relative risk studies would be prohibitive.
Future

- New vehicles have “black box” recording data that would provide information on the crash and have a passive alcohol recording sensors in vehicle.

Intermediate

- Video and audio recording (similar to SHRP-2) assessing driver behaviors and crash information.
- Challenges with participation due to privacy concerns.

Immediate

- Continue roadside surveys.
- Add an alcohol imputation system for the GES.
- Expand CODES to more sites/states.
- “Place Of Last Drink” (POLD) in every police crash report when alcohol is suspected.
  - Currently done in State of WA and recommended by NHTSA, NTSB, and NLLEA.
Thank you