

Alcohol-Related Fatalities – Q&As

This document answers questions related to the differences between the number of alcohol-related fatalities as reported by some states and those reported by NHTSA.

1. Why do some states report a smaller number of alcohol-related fatalities than the number reported by NHTSA?

A. Discrepancies may occur because NHTSA and a state may use different approaches to counting alcohol-related fatalities. The primary reason for these discrepancies is that some states include only those fatalities that occur in crashes where alcohol involvement is **known**. NHTSA, on the other hand, also includes those fatalities that occur in crashes where actual alcohol involvement is unknown, but is estimated using imputation.

2. What is “imputation”?

A. Imputation, the statistical procedure of ‘filling in’ missing data with plausible values, is an effective approach to estimating missing data. Imputation is widely used by researchers whose analyses would otherwise be biased by missing data.

3. Are there a large number of fatal crashes where alcohol involvement is not known?

A. Yes. On an average, in more than 50 percent of the cases, alcohol involvement, as determined by actual alcohol testing, is not known. Alcohol test results may not be known for any of several reasons: the test was given, but the results were not obtained by the Fatality Analysis Reporting System (FARS); the test was refused; FARS was unable to determine if the tests were given; or, the test was not given.

4. How does NHTSA “impute” alcohol involvement?

A. Imputation, as applied by NHTSA, uses characteristics of the persons involved in the crash to predict alcohol involvement when it is **not known**. Those characteristics include police-reported drinking, age, sex, restraint-use, type of crash, time of day, and driver of striking or struck vehicle.

5. How does NHTSA count alcohol-related fatalities?

A. NHTSA counts a fatality as alcohol related if it occurs in a crash where any of the drivers, pedestrians or pedalcyclists involved has a Blood Alcohol Concentration (BAC) of 0.01 or more. BAC is the grams of alcohol per deciliter of blood (g/dl). NHTSA determines a fatality to be alcohol related based on known BACs in the FARS as well as imputed BACs when an alcohol test result is not reported.

6. What is the disadvantage of not imputing alcohol involvement?

A. Because alcohol test results are unknown for a large proportion of cases, reporting alcohol-related fatalities based only on those cases with known results could lead to a significant underestimate of alcohol-related fatalities. When imputation is not used, cases with unknown alcohol involvement are treated as not being alcohol related.

7. What are the benefits of imputing alcohol involvement?

A. Because the reporting of alcohol test results varies widely by state, imputation provides a more meaningful way for states to assess the problem of alcohol involvement in fatal crashes and compare the extent of their problem with other states. In addition, because NHTSA has applied imputation back to 1982 data, using the NHTSA estimates enables a state to perform a consistent assessment of its progress as well as to better allocate funds to impaired driving programs. Without imputation, the wide variation in a state's year-to-year reporting of alcohol involvement could produce a less consistent assessment of progress.

8. Are there any other reasons why NHTSA's estimates of alcohol-related fatalities may differ from those reported by some states?

A. Yes. Other reasons that a state estimate of alcohol-related fatalities would differ from NHTSA's estimate include: the state may exclude fatalities that occur in some jurisdictions; the state may count only fatalities in crashes with an alcohol involved driver; the state may use an alcohol threshold other than 0.01 g/dl for counting alcohol related fatalities; or, the state may use data that has not yet been reported to FARS. While these definitional differences may cause a discrepancy in some states, the principal difference is whether or not imputation is used.

9. How could estimates of alcohol-related fatalities be improved?

A. Data are most reliable when they are known. Consequently, if states tested all drivers involved in fatal crashes (killed *and* surviving) as well as improved the reporting of alcohol (BAC) test results to FARS, improved estimates of alcohol-related fatalities could be obtained.

More information about the methodology to impute missing BAC test results can be found in the following report located on NCSA's web site:

<http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/Rpts/2002/809-403.pdf>

Additional information about imputation and statistics on alcohol-related fatalities can be found at:

<http://www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/AvailInf.html>

