

2004 National Health Interview Survey Injury and Poisoning Episode Files

The Family Core portion of the 2004 survey included questions about medically consulted injuries and poisonings that occurred for any member of the family within a three-month reference period. All injury and poisoning information was provided by the family respondent. Two data files containing injury and poisoning information were created from these data: the Injury/Poisoning Episode file and the Verbatim Injury/Poisoning Episode file.

Between 2003 and 2004, many changes were made to the Family Core Injury/Poisoning Section of the NHIS. Questions that previously required verbatim responses (body part injured and kind of injury) now have response categories. Additional questions were asked about the date of the injury/poisoning of people who did not know the month, day, and year that the injury/poisoning occurred. Several questions (type of vehicle that hit pedestrian, cause of burn, type of animal bite, and whether the injury/poisoning caused any limitation of activity) were dropped from the survey. Several questions had changes made to their response categories. See the section titled Changes/Additions/Deletions to the 2004 Injury/Poisoning Section (FIJ) in this document for more details.

Between 2003 and 2004, there was a change in the inclusion criteria. In 1997-2003, the Injury/Poisoning Episode file and the Verbatim Injury/Poisoning Episode file contained episodes that were reported to occur within 104 days or four months of the interview and episodes where the date of the injury or poisoning was not reported. Beginning in 2004, the decision was made to retain all injury/poisoning episodes that reportedly occurred during the three months (91 days) prior to the date the injury/poisoning questions were asked based on responses to family level questions FIJ.010_01.000 to FIJ.028_00.000. Therefore, even if the date of the injury or poisoning episode subsequently reported by the family respondent in the family level questions (“DURING THE PAST THREE MONTHS, that is since [fill 1: date (91 days before today's date)], [fill 2: did you/did you or anyone in your family] have an injury where any part of [fill 3: your/the] body was hurt, for example, with a [fill 4: (random set of examples) cut or wound, broken bone, sprain or burn?]”; “DURING THE PAST THREE MONTHS, how many different times [fill 1: were you/was ALIAS] injured?”, “Did [fill 1: you /ALIAS] talk to or see a medical professional about [fill 2: any of these injuries/this injury/your injury or injuries/his injury or injuries/her injury or injuries]?”; “Of [fill 1: the ^TFINJ3M/all the] times that [fill 2: you were/ALIAS was] injured, how many of those times was the injury serious enough that a medical professional was consulted?”; “DURING THE PAST THREE MONTHS, that is since [fill 1: date (91 days before today's date)], [fill 2: were you/ were you or anyone in your family] poisoned by swallowing or breathing in a harmful substance such as bleach, carbon monoxide, or too many pills or drugs? Do not include food poisoning, sun poisoning, or poison ivy rashes.”; “DURING THE PAST THREE MONTHS, how many different times [fill 1: were you/was ALIAS] poisoned? Do not include food poisoning, sun poisoning, or poison ivy rashes.”; “Did [fill 1: you /ALIAS] talk to or see a medical professional about [fill 2: any of these poisonings/this poisoning/your poisoning or poisonings/his poisoning or poisonings/her poisoning or poisonings]?”; “Of [fill 1: the ^TFPOI3M/all the] times that [fill 2: you were/ALIAS was] poisoned, how many of those times was the poisoning serious enough that a

medical professional was consulted?”) was outside the 91 day reference period, the episode is included in the Injury/Poisoning Episode file and the Verbatim Injury/Poisoning Episode file. Several flags have been created to indicate which episodes may have occurred outside the 91 day reference period (ETFLG and BEIFLG).

I. Injury/Poisoning Episode File

The Injury/Poisoning Episode file is an episode-based file: each medically consulted (e.g., call to a poison control center; use of an emergency vehicle or emergency room; visit to a doctor’s office or other health clinic; phone call to a doctor, nurse, or other health care professional) injury and poisoning episode reportedly occurred during the three months prior to the date the injury/poisoning questions were asked based on responses to family level questions FIJ.010_01.000 to FIJ.028_00.000, and resulted in one or more conditions. An injury episode refers to the traumatic event in which the person was injured one or more times from an external cause (e.g., a fall, a motor vehicle traffic accident). An injury condition is the acute condition or the physical harm caused by the traumatic event. Likewise, a poisoning episode refers to the event resulting from ingestion of or contact with harmful substances, as well as overdoses or wrong use of any drug or medication, while a poisoning condition is the acute condition or the physical harm caused by the event. A person may record up to a total of ten injury and/or poisoning episodes and will be represented in this file as many times as he/she had unique injury and/or poisoning episodes. Each episode must have at least one injury condition or poisoning classified according to the nature-of-injury codes 800-909.2, 909.4, 909.9, 910-994.9, 995.5-995.59, and 995.80-995.85 in the Ninth Revision of the International Classification of Diseases (ICD-9-CM). Although for data year 2004, one episode with an ICD-9-CM code of 995.3 was retained in the file based on the verbatim response given by the respondent to the question about how the injury happened. Other health conditions that were reported as occurring with the injury or poisoning, even if they are not classified according to the nature-of-injury code numbers 800-909.2, 909.4, 909.9, 910-994.9, 995.5-995.59, and 995.80-995.85 (e.g., mononeuritis of unspecified site (355.9), other symptoms referable to back (724.8)), are also included in the Injury/Poisoning Episode file.

The Injury/Poisoning Episode file contains information about the external cause and nature of the injury or poisoning episode, what the person was doing at the time of the injury or poisoning episode, the date and place of occurrence, the elapsed time between the date of the injury or poisoning episode and the date of the injury/poisoning questions were asked, whether the person was hospitalized, and whether the person missed any days from work or school due to the injury or poisoning, ICD-9-CM diagnostic codes, and ICD-9-CM external cause codes. ICD-9-CM diagnostic and external cause codes were assigned for all injury and poisoning episodes based on information about how the injury or poisoning happened, the body part injured or poisoned, and the type of injury or poisoning, along with responses to questions about specific types of injury or poisoning episodes, place of occurrence, and activity.

During the 2004 data editing process, 117 injury and poisoning episodes were removed out of an initial total of 2,557. These included episodes with no information regarding cause, date and place of occurrence, etc., and duplicate episodes. In addition, episodes were removed if they consisted solely of health conditions that could not be classified according to nature-of-

injury codes 800-909.2, 909.4, 909.9, 910-994.9, 995.5-995.59, and 995.80-995.85 of the ICD-9-CM with the exception of the one episode mentioned above.

As in previous years, respondents reported episodes that they considered poisonings (e.g., food poisoning and allergic reactions) but that are not considered poisonings based on the ICD-9-CM. These types of episodes were included in the 1997-2003 data files. Beginning in 2004, episodes that are not considered poisonings based on ICD-9-CM are no longer included in the Injury/Poisoning data files.

This file only contains information about injury and poisoning episodes. Other person-level information can be obtained by linking the Injury/Poisoning Episode file to other 2004 NHIS data files (Person, Sample Adult, and Sample Child) using the household serial number (HHX), family serial number (FMX), and person number (FPX). When using a linked Injury/Poisoning Episode file and Sample Adult file, analysis should be limited to those episodes for persons included in the Sample Adult file, and the Sample Adult weight should be applied. When using a linked Injury/Poisoning Episode file and Sample Child file, analysis should be limited to those episodes for persons included in the Sample Child file, and the Sample Child weight should be applied.

Recall Period and Weights

Questions in the Injury/Poisoning section of the 2004 NHIS have a recall period of the “last 3 months.” However, as the time between injury/poisoning and date the injury/poisoning questions were asked increases, the number of injuries/poisonings reported decreases. For most analyses of the injury/poisoning data (e.g., estimates for all types of injury/poisoning episodes and estimates for less severe injuries/poisonings), limiting data to episodes with a reported five weeks or fewer between the injury/poisoning and the date the injury/poisoning questions were asked is recommended because analyses showed that respondents tend to forget less serious injuries (Warner, et al., 2005). For analysis of injury/poisoning episodes resulting in more serious outcomes (e.g., estimates for fractures and hospitalizations) that are unlikely to be forgotten, the data should not be limited to the five-week period. The longer period of time between the injury/poisoning episode and the date the injury/poisoning questions were asked will increase the number of episodes reported and therefore increase the size of the sample and provide richer detail and greater stability in the estimate. We do not suggest calculating two estimates, one for serious and one for non-serious injuries/poisonings and combining the two estimates.

Analysts may wish to use the recommended five-week reference period to maintain consistency with other studies using the five-week reference period with NHIS injury/poisoning data. However, because the number of days since the injury/poisoning occurred is now provided for each episode on the public use data file, analysts can choose the time period that is the most appropriate for their analysis.

To calculate an annual estimate of the number of injuries and poisonings, the weighted number of episodes reported during a time period is multiplied by the number of time periods in a year. For instance, to estimate the number of injury or poisoning episodes occurring annually

using episodes with three-months or less elapsing between the injury/poisoning and the date the injury/poisoning questions were asked, each three-month weighted count should be multiplied by 4 (i.e., by $52/13=4$). If data are limited to episodes with five-weeks between the injury/poisoning and the date the injury/poisoning questions were asked, each five-week weighted count should be multiplied by 10.4 (i.e., by $52/5=10.4$).

Analysts are cautioned against estimating the number of different *people* injured or poisoned annually using the current NHIS questions. Estimating the number of persons injured using the annualizing method described in the above paragraph (i.e., multiplying the estimate by the number of time periods in a year) assumes that the same individuals experienced injuries at the same rate over the year. Analysts are cautioned to check the Dataset Documentation and the specific item in the questionnaire in order to insure that annual estimates for these kinds of injury or poisoning episodes have intrinsic meaning.

Variance Estimation

This file does not contain the design variables used in variance estimation. To obtain the design information, the Injury/Poisoning Episode file must be linked to the Person file.

Technical Notes and Imputation Information

Two variables on the Injury/Poisoning Episode file, ICAUS and ECAUS, describe the external cause of the episode. ICAUS is the actual item found in the questionnaire. For each unique episode, the interviewer selected the category of ICAUS that he/she felt best described the episode based on the respondent's description of how the injury or poisoning happened (IPHOW). ECAUS is a recoded variable that describes the cause of the episode using categories based on ICD-9-CM external cause codes. The category into which an episode was placed was based entirely on the first ICD-9-CM external cause code listed for that episode. Appendix I in the Injury/Poisoning Episode Dataset Documentation contains a list of the ICD-9-CM external cause codes found in each category.

Analysts are cautioned regarding their use of the variable RPCKDMR, which indicates the elapsed time between the date of the injury or poisoning episode and the date the injury/poisoning questions were asked. This variable is based on only the month, day, and year of the injury or poisoning episode provided by the respondent and the actual day the respondent was asked the injury/poisoning questions. No information from additional date questions that were added to the survey in 2004 was used in the creation of this variable. When possible, the elapsed time between the date of the injury or poisoning episode and the date the injury/poisoning questions were asked is given in days. The time between the date of the injury or poisoning episode and the date the injury/poisoning questions were asked is only given in months when the day of the injury or poisoning episode was not reported. In previous years, the calculation of this variable was based on the last date when the interview was opened for examination or input of data, not necessarily on the date when the injury/poisoning questions were asked, which could be different. This could happen if the interviewer was unable to complete the interview in one visit and had to return at a later date, so the injury and poisoning questions may have been completed earlier than indicated by the date of the interview recorded

by the CAPI instrument. If this occurred, the actual time between the date of the injury or poisoning episode and the date the injury/poisoning questions were asked would be less than the elapsed time indicated by the variable RPCKDM. Beginning in 2004, the actual date when the injury and poisoning questions were completed was recorded and used in the calculation of this variable.

Beginning in 2004, imputation was implemented for episodes that did not have a valid month, day, and year of occurrence. Imputation was done so that it would be possible to calculate a specific elapsed time in days between the date of the injury/poisoning episode and the date the injury/poisoning questions were asked for all episodes in the Injury/Poisoning Episode file and the Verbatim Injury/Poisoning Episode file. Since all episodes in the files now have a specific elapsed time (RPD) between the date of the injury/poisoning episode and the date the injury/poisoning questions were asked, analysts will be able to calculate estimates based on the time period of their choice.

The variable RPD (new for 2004) indicates the elapsed time in days between the date of the injury or poisoning episode and the date the injury/poisoning questions were asked. This variable is based on all date information that was given by the respondent, and when date information was missing, imputed information was used in the creation of this variable. For some injury and poisoning episodes, the respondent was only able to provide the month and year of occurrence; or a time period within the month (beginning, middle, or end) and year of occurrence; or the number of days, weeks, or months ago. For cases in which a month but no time period during the month was provided, a day was imputed between 1 and the last day of the month. For cases in which the month of the injury/poisoning episode and the time period within the month was provided, the day of the month was imputed. If the episode was reported as occurring during the beginning of the month, a day of 1-10 was imputed; for cases in the middle of the month, a day of 11-20 was imputed; and for cases at the end of the month, a day of 21 to either 28, 29, 30, or 31, depending on the month, was imputed. In other instances, the respondent was only able to provide a time period (i.e., number of days, weeks, or months) between the date the injury/poisoning occurred and the date the injury/poisoning questions were asked. For responses given in days ago, the corresponding value of RPD was calculated. For responses given in weeks ago or months ago, RPD was imputed from within, respectively, the interval $7(\# \text{ weeks ago}) \pm 3$ or the interval $30(\# \text{ months ago}) \pm 15$.

An elapsed time interval (new for 2004), with lower and upper bounds BIETD and EIETD, respectively, indicates the amount of uncertainty in the injury/poisoning episode date information that was provided by the respondent. If the specific day, month, and year of the episode were provided or could be deduced from information provided by the respondent, then $BIETD = EIETD = RPD$. Otherwise, BIETD and EIETD indicate the lowest and highest values of the elapsed time between the episode and the date the injury/poisoning questions were asked that were consistent with the reported episode date information, and RPD was imputed to be within that interval. In a few cases where insufficient information was provided to determine an elapsed time interval, values of BIETD, EIETD, and RPD were obtained from a random “donor” (another reported episode) using hot deck imputation.

Several variables have been added to the 2004 Injury/Poisoning Episode file that supply

information about the imputed data and about the consistency of the episode date information provided by respondents. The variable IMPMETH indicates which episodes have a value for RPD that is based on a specific day, month, and year of the episode that was provided or was deduced from information provided by the respondent (i.e., no imputation was needed) and which episodes have a value for RPD that was imputed. Flag variables have been added to the file to indicate whether the elapsed time (RPD) or the elapsed time interval boundaries (BIETD and EIETD) fall within the 91-day reference period mentioned in family level questions FIJ.010_01.000 and FIJ.020_00.000. This was done because it is possible that the respondent provided inconsistent information (i.e., reported that the injury or poisoning occurred during the 91-day reference period mentioned in the family level questions, and then, in follow-up questions about the episode date, reported that the injury or poisoning occurred beyond the 91-day reference period mentioned in the family level questions). Also, the elapsed time interval boundaries and imputed values of the elapsed time were not constrained to be ≤ 91 ; they were only constrained to be consistent with the date information reported by the respondent. Variable ETFLG indicates whether the elapsed time (RPD) is ≤ 91 days. Variable BEIFLG indicates whether the boundaries (BIETD and EIETD) of the elapsed time interval are ≤ 91 days. These flags were created for convenience so that analysts can decide which version of inconsistently-reported date information to use. Analysts may also choose to re-impute values of RPD that are greater than 91, constraining them to be within the 91-day limit as well as within the elapsed time interval.

II. Verbatim Injury/Poisoning Episode File

The Verbatim Injury/Poisoning Episode file contains edited narrative text descriptions of the injury or poisoning provided by the respondent and includes a description of how the injury or poisoning happened and “other specified” responses for the body part injured, the kind of injury, the place the person received medical care, the cause of the poisoning, and the activity at the time of the injury/poisoning. (The pre-edited responses are “verbatim” only insofar as the interviewer could type the information and condense it to fit the 300 character field.) Editing was done only to protect the injured or poisoned person’s confidentiality. Text descriptions used to replace original text that could have resulted in a breach of confidentiality are surrounded by arrows ($\langle \rangle$). Grammatical and/or spelling errors were not corrected. The codes of “R,” which represents “Refused;” “D” or “DK,” which represent “Don’t know;” and “N,” which represents “No more information,” have also been left in the file. The following types of changes were made to the file in order to protect the injured or poisoned person’s confidentiality:

- Person names (first, middle, and/or surnames or initials) were replaced with $\langle \text{He} \rangle$ or $\langle \text{She} \rangle$;
- Names of commercial operations were replaced with a general category (e.g., the name of a restaurant that serves fast food would be replaced with $\langle \text{fast food restaurant} \rangle$);
- All place names including cities, counties, states, and street addresses were removed;
- The detailed description of an occupation was replaced with a more general category using the Standard Industrial Classification as a guide;

- Brand names were replaced with a generic term for the product (e.g., the brand name of a car would be replaced with <motor vehicle>);
- Text that indicated unusual personal behavior or events was modified to make it less remarkable;
- Any group or organization that was known to have a register of its members was replaced with a generic term.

Changes/Additions/Deletions to the 2004 Injury/Poisoning Section (FIJ)

<u>Variable Name</u>	<u>Brief Variable Description</u>	<u>Brief Description of Change</u>
IPDATEM	Month of injury/poisoning episode, as reported	New name for IJDATE_M; change in question wording
IPDATEY	Year of injury/poisoning episode, as reported	New name for IJDATE_Y; change in question wording
DAY	Day of the week of injury/poisoning episode	Dropped
IPDATENO	Approximate time since injury/poisoning episode: Number	New variable
IPDATETP	Approximate time since injury/poisoning episode: Time period	New variable
IPDATEMT	Approximate point in month of injury/poisoning episode	New variable
RPCKDMR	Time between injury/poisoning episode and date questions were asked	New name for RPCKDM; change in categories
RPD	Time between injury/poisoning episode and date questions were asked, in days	New variable
BIETD	Lower boundary of elapsed time interval, in days	New variable
EIETD	Upper boundary of elapsed time interval, in days	New variable
EDIPBR	Episode date information reported by the respondent	New variable
IMPMETH	Imputed part of injury/poisoning date or elapsed time interval	New variable
MUMON	Reported or imputed month of injury/poisoning episode	New variable
MUYEAR	Reported or imputed year injury/poisoning episode	New variable
ETFLG	Elapsed time flag	New variable

<u>Variable Name</u>	<u>Brief Variable Description</u>	<u>Brief Description of Change</u>
BEIFLG	Elapsed time interval boundary flag	New variable
IPHOW	Description of injury/poisoning episode	Replaces IJHOW1-IJHOW4; change in question wording
ICAUS	Cause of injury episode	New name for CAUSNEW; change in categories
ECAUS	Cause of injury/poisoning based on E codes	New name for ECAUSNEW; additional E codes used to create recode
IJBODY1- IJBODY4	Parts of body hurt	Responses now based on categories; change in question wording
IJBODYOS	“Other” part of body hurt	New variable
IJTYPE1A IJTYPE1B	How body part 1 was hurt	Replaces IJKIND1; responses based on categories; change in question wording
IJTYPE2A IJTYPE2B	How body part 2 was hurt	Replaces IJKIND2; responses based on categories; change in question wording
IJTYPE3A IJTYPE3B	How body part 3 was hurt	Replaces IJKIND3; responses based on categories; change in question wording
IJTYPE4A IJTYPE4B	How body part 4 was hurt	Replaces IJKIND4; responses based on categories; change in question wording
IJTYP1OS- IJTYP4OS	“Other” way body parts were hurt	New variables
IPPCHCP	Where received medical care: call to medical professional	New name for IJMED_2; change in question wording
PPCC	Where received medical care: call to poison control center	New name for IJMED_3; change in question wording

<u>Variable Name</u>	<u>Brief Variable Description</u>	<u>Brief Description of Change</u>
IPDO	Where received medical care: doctor's office/clinic	Replaces IJMED_4 and IJMED_5; change in question wording
IPER	Where received medical care: emergency room	New name for IJMED_6; change in question wording
IPEV	Where received medical care: emergency vehicle	New variable
IPOTH	Where received medical care: any place else	New variable
IPOTHOS	Where received medical care: any place else, specify	New variable
IPVER	Did not receive medical care	New variable
IPHOSP	Hospitalized over night due to injury/poisoning episode	New name for IJMED_7; change in question wording
IPIHNO	Number of nights in the hospital	New name for IHNO
IMTRAF	Traffic-related injury	New variable
IMVWHO	Injured as...	New name for MVWHO; change in question wording and response categories
IMVTYP	Type of vehicle injured person was in	New name for MVTYP; change in response categories
ISBELT	Restrained at time of accident	New name for SBELT; change in question wording
IHELMT	Wearing a helmet at the time of the accident	New name for HELMT
MVHIT	Type of vehicle striking pedestrian	Dropped
BURN	Cause of burn/scald	Dropped
IFALL1	How person fell: First response	New name for FALLNEW1; change in response categories

<u>Variable Name</u>	<u>Brief Variable Description</u>	<u>Brief Description of Change</u>
IFALL2	How person fell: Second response	New name for FALLNEW2; change in response categories
FALLN1- FALLN10	How person fell: Mention/not mention variables	Dropped
IFALLWHY	Cause of fall	New name for FWHY; change in response categories
ANIMAL	Kind of animal or insect bite	Dropped
PPOIS	Cause of poisoning episode	New name for POITP; change in response categories
PPOISOS	“Other” cause of poisoning episode	New variable
IPWHAT1	Activity at time of injury/poisoning episode: First response	New name for WHAT_1; change in question wording
IPWHAT2	Activity at time of injury/poisoning episode: Second response	New name for WHAT_2; change in question wording
WHAT1- WHAT11	Activity at time of injury/poisoning episode: Mention/not mention variables	Dropped
IPWHATOT	“Other” activity at time of injury/poisoning episode	New variable
IPWHER1	Location at time of injury/poisoning episode: First response	New name for WHERNEW1; change in response categories
IPWHER2	Location at time of injury/poisoning episode: Second response	New name for WHERNEW2; change in response categories
WHERN1- WHERN16	Location at time of injury/poisoning Episode: Mention/not mention variables	Dropped
IPEMP	Employed at time of injury/poisoning episode	New variable
IPWKLS	Days of work missed	New name for WKLS; change in question wording and response categories

<u>Variable Name</u>	<u>Brief Variable Description</u>	<u>Brief Description of Change</u>
IPSTU	Student at time of injury/poisoning episode	New variable
IPSCLS	Days of school missed	New name for SCLS; change in question wording and response categories
IJADL	Need help with personal care needs	Dropped
LIMTM	Need help with personal care needs for 6 months or longer	Dropped
IJIAD	Need help with routine needs	Dropped
HLIMT	Need help with routine care needs for 6 months or longer	Dropped
ICD9_5	Fifth ICD-9-CM diagnosis code	New variable
ICD9_6	Sixth ICD-9-CM diagnosis code	New variable
ICD9_7	Seventh ICD-9-CM diagnosis code	New variable
ICD9_8	Eighth ICD-9-CM diagnosis code	New variable

References

Warner M, Schenker N, Heinen MA, Fingerhut LA. The effects of recall on reporting injury and poisoning episodes in the National Health Interview Survey. *Inj Prev* 2005;11(5):282-7.