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Using the KIDS' Inpatient Database (KID) to Estimate Trends
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TABLE OF CONTENTS

INDEX OF TABLES

INDEX OF FIGURES

EXECUTIVE SUMMARY

The Kids' Inpatient Database (KID) is a unique and powerful nationwide database of hospital inpatient stays for children. It is a sample of pediatric discharges from community, non-rehabilitation hospitals from states participating in HCUP. Researchers and policy makers use the KID to identify, track, and analyze national trends in health care utilization, access, charges, quality, and outcomes. Presently, KID databases are available for three years: 1997, 2000, and 2003. The KID is part of the Healthcare Cost and Utilization Project (HCUP), sponsored by the Agency for Healthcare Research and Quality (AHRQ).

The KID contains all-payer data on hospital inpatient stays from nearly all community hospitals in states participating in the Healthcare Cost and Utilization Project (HCUP). Every three years since 1997, the KID provides information on 6.6 to 7.4 million discharges from between 2,521 and 3,438 hospitals. The KID includes 10 percent of uncomplicated in-hospital births and 80 percent of other pediatric cases from each hospital. The table below shows the participating states, the number of hospitals, and the number of discharges for each KID year from 1997 to 2003. In total, these three annual KID databases contain more than 7.4 million discharge records.

Year	KID States Added to the Frame	Number of KID States	Number of KID Hospitals	Sample Size	Number of KID Discharges in the Universe
1997	AZ, CA, CO, CT, FL, GA, HI, IA, IL, KS, MA, MD, MO, NJ, NY, OR, PA, SC, TN, UT, WA, WI	22	2,521	1,905,797	6,657,326
2000	KY, ME, NC, TX, VA, WV; Drop IL	27	2,784	2,516,833	7,291,032
2003	Add IL, MI, MN, NE, NH, NV, OH, RI, SD, VT, WV	36	3,438	2,984,129	7,409,162

Several revisions have been made to the KID sample design since its inception that could affect estimates calculated from the KID. First, the sampling frame changed over time as more states made their data available to HCUP. For example, the 1997 KID was drawn from a frame of 22 states representing 62 percent of the U.S. population. In contrast, the 2003 KID was drawn from a frame of 36 states representing 87 percent of the U.S. population. Second, the KID hospital universe and strata were defined differently for 1997 compared with subsequent data years. The age range for the 1997 KID was 0 to 18 years old. However, in 2000 and later years, the age range was extended to include individuals 0 to 20 years of age. In addition, the hospital stratification variables were redefined, rehabilitation facilities were dropped from the target universe, and the calculation of discharge weights was based on hospital discharges rather than total facility discharges. Third, the definitions and availability of KID database variables changed over time. For example, diagnosis and procedure codes and Diagnosis Related Groups (DRGs) changed annually.

Analysts who wish to use the KID to estimate trends for patient and hospital outcomes may need to adjust for these changes. At the least, analysts need to keep them in mind as potential confounders in explaining trends. In this report, we enumerate the important revisions to the KID sample design between 1997 and 2003, we suggest ways to manage these changes, and we offer advice on statistical methods that may be useful for investigating trends. In addition, we offer new KID Trends Supplemental Files, which provide data elements and discharge weights that are consistently defined over time and are intended to simplify trend analyses using the KID.

The following changes occurred to the KID over time:

- States were added to the sampling frame
- Design changes were made in 2000, including the following:
  - 19- and 20-year-old patients were added to the 2000 and 2003 KID
  - Short-term rehabilitation hospitals were excluded from the frame
  - The count of population discharges was changed
  - Hospital stratification variables were redefined for weighting
- Data elements, names, and values were changed. For example, the state and the American Hospital Association hospital identifier were added to the 2000 and 2003 KID files, but not the 1997 KID file.

The changes that produced the greatest impact on estimates are summarized below, while information on changes with less impact can be found in the full report.

States Were Added to the Sampling Frame. Perhaps the most significant changes to the KID over time were additions of states to the sampling frame. Consequently, the KID increasingly covered a greater percentage of the hospital discharge population and became increasingly more representative through the years.

19- and 20-Year-Old Patients Were Added to the 2000 and 2003 KID. For 1997, the pediatric population was defined as discharges for patients 0 to 18 years of age, inclusive. The 2000 and 2003 KID included discharges of patients ages 0 to 20, inclusive. Therefore, to be consistent, any trends that include the 1997 KID should eliminate 19- and 20-year-old patients from the 2000 and 2003 KID.

Rehabilitation Hospitals Were Excluded and the Count of Population Discharges Was Changed. In the process of analyzing stratification variables, we found that patients treated in short-term rehabilitation hospitals tended to have lower mortality rates and longer lengths of stay than patients in other types of community hospitals. Moreover, the completeness of reporting for rehabilitation hospitals was very uneven across the states. Therefore, beginning in 2000, we eliminated short-term rehabilitation hospitals from the KID (and the target universe). For the 1997 KID, we calculated the number of discharges in the universe as the sum of births and *total facility discharges* reported for each U.S. community hospital in the AHA Annual Survey Database. Beginning in 2000, we calculated total universe discharges as the sum of births and *hospital discharges*, a number that is more consistent with the number of discharges provided by the state data sources—and we substituted total facility discharges only if the number of hospital discharges was missing. According to our analyses, it appears that the elimination of short-term rehabilitation hospitals had a smaller impact than the method of counting discharges in the universe.

Hospital Stratification Variables Were Redefined for Weighting. The KID hospital stratification scheme was also altered beginning with the 2000 data year. We find that the impact of changing the stratification variables was minimal. However, the change in some definitions, such as teaching status, could be problematic to the extent that researchers rely on these definitions to classify hospitals over time. Unfortunately, we are unable to provide revised stratum definitions conforming to the 2000 definitions for the 1997 KID file because of confidentiality constraints. A number of states do not allow the release of hospital identifiers; providing stratum definitions that are consistent across time could result in identification of specific institutions. Therefore, ***analysts must either find some other way to consistently define hospital characteristics over time, or they must acknowledge the potential impact of such changes on their conclusions***. For example, hospital size could be measured in terms of total discharges instead of total beds.

Changes in Data Element Names and Values. Changes to other KID data elements are easier to manage. First, several variables were renamed in the KID files. For example, the discharge weight is named DISCWT_U in the 1997 file and it is named DISCWT in the 2000 and 2003 files. In addition, the categorical variable "sex" was changed to the indicator variable "female" starting with the 2000 KID. Such alterations are easily dealt with by simple programming statements. Appendix A contains the information necessary to resolve these naming discrepancies. Second, ICD-9-CM diagnosis and procedure codes have changed annually to account for new disease and treatment coding. These changes can make it difficult to consistently classify patients over time. A conversion table mapping code changes between 1997 and 2003 is available online (http://www.cdc.gov/nchs/data/icd9/icdcnv05.pdf). ***We recommend that analysts take ICD-9-CM coding revisions into account when classifying discharges by medical conditions or by surgical interventions over time.*** One simple solution is to use AHRQ's Clinical Classification Software, available from AHRQ's Website (http://www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp), although the broad categories of conditions may not be appropriate for all applications. This software is updated annually to account for revisions to the ICD-9-CM codes and can be used for all data years of the KID.

Appropriate Statistical Computations for Trends. Finally, **KID *trend analyses should be conducted using statistical software capable of accounting for the complex sampling design of the KID***, such as SAS, Stata, and SUDAAN. Estimates of means, rates, and totals that do not account for the sampling design might not be severely biased. However, estimates of standard errors will almost certainly be too small, which could lead to incorrect inferences concerning statistical significance and reliability. To address changes in the method of calculating discharge weights, a supplemental file containing new discharge weights for the 1997 KID is now available for trend analyses (http://www.hcup-us.ahrq.gov/db/nation/kid/kiddbdocumentation.jsp).

INTRODUCTION

The Kids' Inpatient Database (KID) is part of a family of databases and software tools developed as part of the Healthcare Cost and Utilization Project (HCUP), a Federal-State-Industry partnership sponsored by the Agency for Healthcare Research and Quality (AHRQ).

The KID is a unique and powerful nationwide database of hospital inpatient stays for children. It is a sample of pediatric discharges from community, non-rehabilitation hospitals from states participating in HCUP. Researchers and policy makers use the KID to identify, track, and analyze national trends in health care utilization, access, charges, quality, and outcomes. Presently, KID databases are available for three years: 1997, 2000, and 2003.

This report is intended to aid analysts who wish to estimate trends or conduct other analyses based on multiple years of the KID. Several revisions were made to the KID sample design between 1997 and 2003 that should be taken into account in most trend analyses.

First, the sampling frame changed over time as more states made their data available to HCUP. For example, the 1997 KID was drawn from a frame of 22 states representing 62 percent of the U.S. population. In contrast, the 2003 KID was drawn from a frame of 36 states representing 87 percent of the U.S. population.

Second, the KID hospital universe and strata were defined differently for 1997 compared with subsequent data years. The age range for the 1997 KID was 0 to 18 years old. However, in 2000 and 2003, the age range was extended to 0 to 20 years old. In addition, the hospital stratification variables were redefined, rehabilitation facilities were dropped from the target universe, and the calculation of discharge weights was based on hospital discharges rather than total facility discharges.

Third, the definitions and availability of KID database variables changed over time. For example, diagnosis and procedure codes and Diagnosis Related Groups (DRGs) changed annually.

Analysts who want to use the KID to estimate trends for patient and hospital outcomes may need to adjust for these changes. At the least, analysts need to keep them in mind as potential confounders in explaining trends. In this report we enumerate the important revisions to the KID sample design between 1997 and 2003, we suggest ways to manage these changes, and we offer advice on statistical methods that may be useful for investigating trends. In addition, we offer a new KID Trends Supplemental File, which provides discharge weights that are consistently defined over time and are intended to simplify trend analyses using the KID.

EXAMPLES OF PUBLISHED STUDIES USING MULTIPLE YEARS OF THE KID

We have identified several published studies using at least two years of the KID:

- Harsha et al. (2005) used the 1997 and 2000 versions of the KID to estimate the incidence of discharges for lymphatic malformations (LM), a variety of treatments rendered for this condition, and the trends in average lengths of stay (ALOS) and hospital charges between 1997 and 2000. They found that treatment trends for pediatric LM remained relatively stable during this time period, whereas hospital charges substantially increased. ALOS remained stable for inpatient LM treatment. The researchers also discovered a significant increase in the rate of admissions for LM among Hispanics between 1997 and 2000.

- Heyworth et al. (2004) employed two years of KID data, 1997 and 2000, to elucidate national practice patterns and trends in the treatment of closed femoral shaft fractures at general hospitals and pediatric hospitals in children of intermediate ages (6-10 years of age). They found that the frequency of surgical treatment such as internal fixation increased significantly over this period, while the frequency of spica casting decreased. The research team also discovered that this trend was significantly greater at pediatric hospitals than in general hospitals. They found that both the average cost of treatment and the average length of stay were significantly lower at pediatric hospitals as compared with general hospitals, regardless of treatment procedures. These findings may be attributable to the growing specialization of pediatric trauma care.
- Berry et al. (2006) compared the in-hospital mortality of Stage I palliation for hypoplastic left heart syndrome (HLHS) between teaching and non-teaching hospitals by using the 1997 and 2000 versions of the KID. The authors concluded that a significant reduction occurred in the number of Stage I palliation procedures in non-teaching hospitals between 1997 and 2000. They also found that patients with HLHS undergoing Stage I palliation in non-teaching hospitals experienced increased in-hospital mortality in 1997.
- Holman et al. (2003) estimated the incidence and described the epidemiologic characteristics of Kawasaki syndrome (KS) among children in the United States, using the 1997 and 2000 KID. Among children less than 5 years of age, the annual KS-related hospitalization rates were similar for 1997 and 2000, and the researchers found that the risk factors and hospitalization rates for KS were generally consistent between 1997 and 2000.
- Campbell et al. (2006) employed two years of KID data—1997 and 2000—to compare racial differences in the management of pediatric appendicitis. They discovered that adverse outcomes such as lower hospitalization rates, higher rates of perforation, lower laparoscopic rates, longer duration of hospitalization, and higher charges tended to occur among African American children with appendicitis.

In the last decade, several other published studies have featured KID data. Although they use only a single year of the KID, many of them could be extended to use multiple years. Examples include:

- Connor et al. (2005), in their recent study using the 2000 KID, attempted to identify patient, institutional, and regional factors that were related to high resource utilization for congenital heart surgery. They discovered that patients who were younger, had greater disease complexity, were born prematurely, were covered by Medicaid, and were admitted during a weekend were more likely to require more frequent utilization. Nonetheless, they found that institutional effects were relatively negligible in explaining the patterns of high cost admissions, irrespective of hospital ownership or teaching status.
- Panepinto et al. (2005) employed the 2000 KID to determine the number of hospitalizations and hospital length of stay (LOS) by age for hospital discharges for vaso-occlusive crises (VOC) in children with sickle cell disease. The authors found that older children with sickle cell disease and VOC were at risk for increased hospitalizations and longer LOS, as compared to younger children.

- Slover and colleagues (2005) examined the relationship between racial and economic factors and the treatment of pediatric long-bone fractures. Their study clearly demonstrates that substantial variation exists in the treatment of pediatric supracondylar humerus across racial groups: African Americans and Hispanics were more likely to receive percutaneous pinning of these injuries than White children. The researchers also found that children with private insurance were more likely than those with Medicaid or self-pay to have femoral shaft fractures treated with an external fixator device.
- Smink et al. (2004) utilized the 1997 KID to investigate whether the hospital volume of pediatric appendectomies was associated with misdiagnosis of appendicitis in children by using the 1997 KID. The authors found that lower hospital volume of pediatric appendectomies was related to the increased likelihood of misdiagnosis of appendicitis in children.

The studies described above suggest the range of conditions that have been investigated using the KID. These studies varied in terms of conditions and procedures. Each of these studies addressed important topics in health services research on pediatric hospitalizations.

OVERVIEW OF THE KID

In this section, we briefly describe the KID. Detailed information on the KID design is available in the report, *Design of the HCUP Kids' Inpatient Database*. This report is available on the AHRQ-sponsored HCUP User Support Website at http://www.hcup-us.ahrq.gov.

The KID contains all-payer data on hospital inpatient stays from nearly all community hospitals in states participating in the Healthcare Cost and Utilization Project (HCUP). Every three years since 1997, the KID provides information on 6.6 to 7.4 million discharges from between 2,521 and 3,438 hospitals. The KID includes 10 percent of uncomplicated in-hospital births and 80 percent of other pediatric cases from each hospital. Table 1 shows the participating states, the number of hospitals, and the number of discharges for each KID year from 1997 to 2003. In total, these three annual KID databases contain more than 7.4 million discharge records.

Each KID record contains patient-level clinical and resource use information included in a typical discharge abstract. Except in those states that do not allow the release of hospital identifiers, the KID can be linked directly to hospital-level data from the American Hospital Association (AHA) Annual Survey Database, to county-level data from the Health Resources and Services Administration Bureau of Health Professions' Area Resource File (ARF), and to ZIP Code-level data from the Census Bureau or private vendors. (County and ZIP Code information pertains to the hospital, not to individual discharges.)

The KID sampling frame included all pediatric discharges from nearly all community, non-rehabilitation hospitals in the HCUP State Inpatient Databases (SID) that could be matched to the corresponding AHA Survey data (subject to state-specific restrictions). Beginning with the 2000 KID, pediatric discharges were defined as having an age at admission of 20 years or less. This change represents a modification compared to the 1997 KID, which included only discharges with an admission age of 18 years or younger.

Table 1: Number of KID States, Hospital, and Discharges, by Year

Year	KID States Added to the Frame	Number of KID States	Number of KID Hospitals	Sample Size	Number of KID Discharges in the Universe
1997	AZ, CA, CO, CT, FL, GA, HI, IA, IL, KS, MA, MD, MO, NJ, NY, OR, PA, SC, TN, UT, WA, WI	22	2,521	1,905,797	6,657,326
2000	KY, ME, NC, TX, VA, WV; Drop IL	27	2,784	2,516,833	7,291,032
2003	Add IL, MI, MN, NE, NH, NV, OH, RI, SD, VT, WV	36	3,438	2,984,129	7,409,162

To facilitate the production of national estimates, discharge weights are provided for each of the KID databases, along with information necessary to calculate variance estimates. For each year, the sum of the discharge weights estimates the total number of pediatric hospital discharges in the hospital universe for that year. For this purpose, hospitals in the frame were post-stratified on six characteristics: ownership/control, bed size, teaching status, urban/rural location, U.S. region, and hospital type (freestanding children's hospital vs. other hospital). It is important to recognize that the definition of pediatric discharges is different for 1997 than it is for 2000 and 2003. In particular, the 1997 KID includes patients up to 18 years of age. In contrast, the 2000 KID and the 2003 KID include patients up to 20 years old. *Consequently, to be consistent with the 1997 KID, all trends and comparisons in this report exclude19-and 20-year-old patients from the 2000 and 2003 KID.*

To improve the representativeness of the KID, the sampling and weighting strategy was modified beginning with the 2000 data. This is especially important for trend analyses that cross between 1997 and 2000 because these design changes might be confounded with other adjustments between 1997 and 2000. A full description can be found in the special report on *Changes in NIS Sampling and Weighting Strategy for 1998*. The changes to the NIS strata described in that report were also applied to the KID strata. The report is available on the AHRQ Website (http://www.hcup-us.ahrq.gov/db/nation/kid/kidrelatedreports.jsp).

The 2000 KID sampling and weighting modifications will be briefly described in the section below.

Stratification Variables

Stratification helps ensure that the KID discharge weights provide accurate estimates for the target universe. Stratification becomes advantageous when the sampling frame (community hospitals in participating HCUP states) differs substantially from the target universe (community hospitals in the U.S.). For example, in 1997, HCUP hospitals tended to be larger than non-HCUP hospitals. As a result, HCUP hospitals had more beds and higher occupancy rates overall, suggesting a continuing need for stratification. These differences were more pronounced in the Northeast and West, and HCUP states in these regions also tended to have higher Medicare managed care penetration and more discharges than their non-HCUP counterparts. In the Northeast, HCUP hospitals also tended to have longer average lengths of stay (ALOS) than did non-HCUP hospitals. Although the number of differences between HCUP and non-HCUP hospitals in the Northeast and West was greater than in other regions, the impact of these differences on estimates was low because HCUP hospitals represented almost all discharges in those regions.

The 1997 KID sample weighting procedure specified up to 216 strata (4 regions x 3 ownership categories x 3 location/teaching categories x 3 bed size categories x 2 hospital types). In application, the effective number of strata was much lower after collapsing cells with fewer than two hospitals. This collapsing was a concern because it required manual review to achieve at least two hospitals per stratum. Moreover, small cells were a concern to some states because of restrictions on hospital identification, which forced the removal of some HCUP hospitals from the sampling frame. Beginning with the 2000 KID, we redefined some stratification variables and identified strata that could be nested or collapsed to avoid small cells in the final sample. This substantially reduced the potential number of KID strata. The three specific changes introduced in 2000 include the following:

Redefining the bed size strata. One reason for small strata was the use of fixed bed size categories across all regions, which created imbalances in the distribution of hospitals across strata. In 1997, for example, fewer than 10 percent of the urban teaching hospitals located in the West were designated as “large” hospitals (500+ beds). In contrast, about 33 percent of the urban teaching hospitals located in the South were designated as large hospitals. Consequently, we defined small, medium, and large bed size categories nested within both region and location/teaching category to ensure that approximately one-third of the hospitals would be allocated to each bed size category.

Redefining the ownership strata. The distributions of U.S. hospitals by type of ownership (public, voluntary, and proprietary) varied significantly by geographic region, making it undesirable to stratify ownership uniformly across all regions, as had been done in 1997. Therefore, beginning in 2000, we nested ownership strata only within selected regions. We used the three original ownership categories for rural hospitals in the South and for urban non-teaching hospitals in the South and West. However, we collapsed the proprietary and voluntary hospitals into a new “private” ownership category for rural hospitals in the West and Midwest regions.

Redefining the teaching strata. Beginning in 2000, we redefined teaching hospitals. In 1997, a hospital was designated a teaching hospital only if it had interns or residents and it either: a) was a member of the Council of Teaching Hospitals or b) offered an AMA-approved residency program. The new definition still defined these same hospitals as teaching hospitals. However, it also included all hospitals with a ratio of interns and residents to beds of .25 or higher. This intern-to-bed ratio was similar to the definition of teaching hospitals employed by the Centers for Medicare & Medicaid Services (CMS, formerly the Health Care Financing Administration).

Rehabilitation Hospitals

In the course of analyzing stratification variables, we found that patients treated in short-term rehabilitation hospitals tended to have lower mortality rates and longer lengths of stay than patients in other types of community hospitals. (Long-term rehabilitation hospitals had always been excluded from the KID.) Moreover, the completeness of reporting for rehabilitation hospitals was very uneven across the states. Therefore, beginning in 2000, we eliminated short-term rehabilitation hospitals from the KID (and the target universe).

Change in Counts of Discharges

For the 1997 KID, we calculated the number of discharges in the universe as the sum of births and *total facility discharges* reported for each U.S. community hospital in the AHA Annual Survey Database. Beginning in 2000, we calculated total universe discharges as the sum of births and *hospital discharges*, a number that is more consistent with the number of discharges provided by the state data sources. We then substituted total facility discharges only if the number of hospital discharges was missing.

KID REPRESENTATIVENESS AND CHANGES TO THE SAMPLING FRAME

Longitudinally, as new states were added to the KID sampling frame, representation has increased. This is quantified in Table 1, shown earlier, and in Figures 1 and 2, which illustrate the trend in the percentage of U.S. states and the percentage of the U.S. population covered by the KID, respectively. Figure 2 displays the geographic distribution of states in the sampling frame over time. Overall, in 2003, the sampling frame for the KID comprises 73 percent of states and 88 percent of the U.S. population. By region, the sampling frame comprises 84 percent of the population in the South, 99 percent in the Midwest, 75 percent in the Northeast, and 92 percent in the West.

Figure 1: Percentage of States and Population Covered by KID

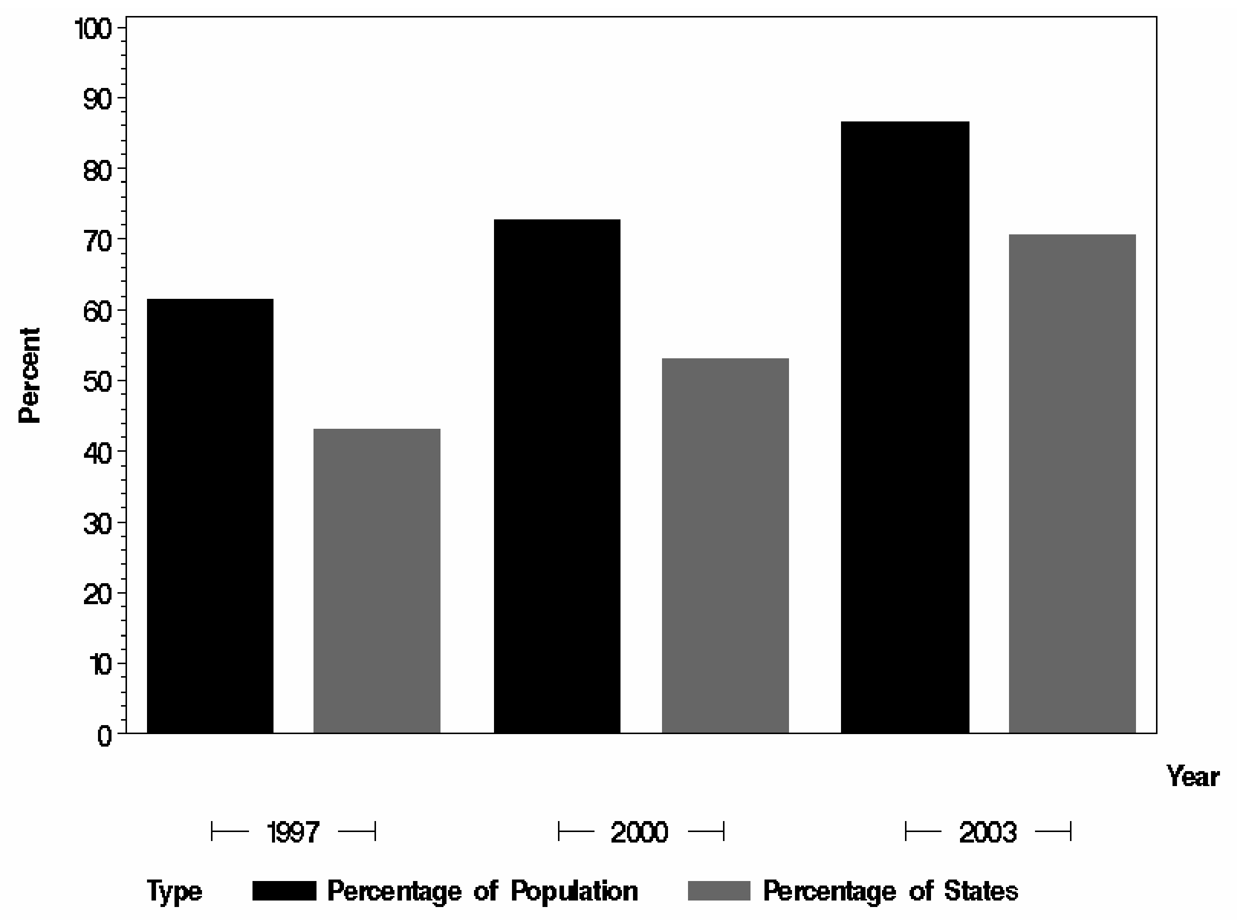
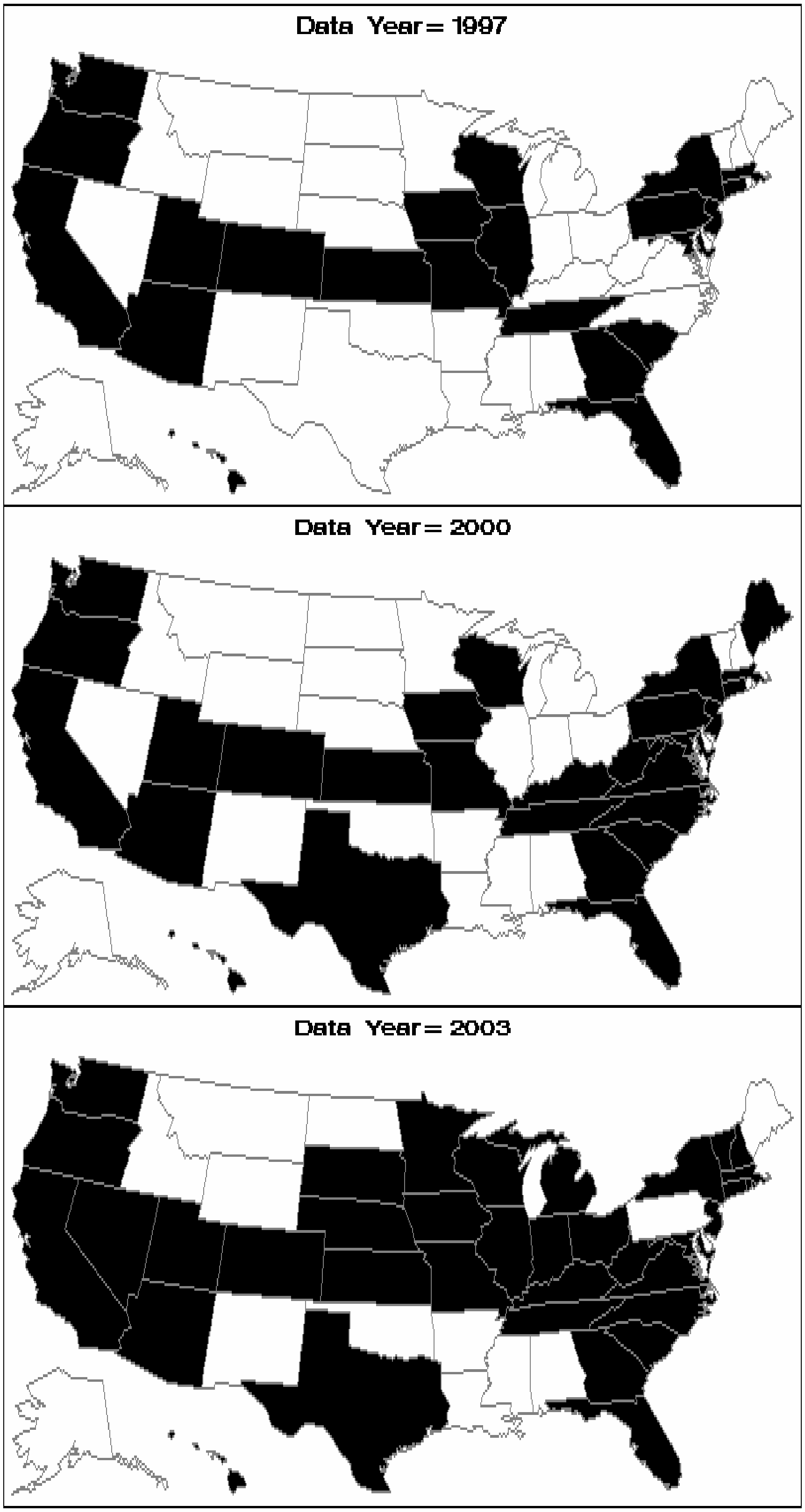


Figure 2: States in the KID Sampling Frame



For each data year, AHRQ compared the KID with the corresponding National Hospital Discharge Survey (NHDS). (This analysis can be found in the *HCUP Kids' Inpatient Database Comparison Report*, available on the AHRQ Website, at http://www.hcup-us.ahrq.gov/db/nation/kid/kidrelatedreports.jsp.) These cross-sectional comparisons indicate that KID statistics tend to be consistent with those generated by the NHDS.

It is useful to compare trends in outcomes calculated from the KID to those calculated from the NHDS. While the sampling frame for the NHDS is unrestricted and contains hospitals from all states, the NHDS sample is much smaller. Thus a potential advantage of using the KID over the NHDS for trend analyses is the larger KID sample, which results in more precise estimates. A potential disadvantage of using the KID is the restricted sampling frame, which could cause estimates to be biased.

Figure 3 depicts the trends in estimates for total pediatric discharges, average lengths of stay (ALOS), and in-hospital mortality rates estimated from the KID compared to those estimated from the NHDS. Estimates of ALOS and total discharges tend to be higher for the NHDS than for the KID, but the trend is comparable between the two databases. However, the estimated in-hospital mortality rates differ substantially for 2003. Between 2000 and 2003, the KID mortality rate decreased while the NHDS mortality rate increased.

Figure 4 compares the trends for average lengths of stay between the KID and the NHDS for each geographic region. Keep in mind that we limited all of the data sets to only those children who were 18 years or younger for a direct comparison between the two sources and within the KID or the NHDS.

Table 2 compares the trends in average lengths of stay between the KID and the NHDS for three specific conditions. These conditions include: asthma (principal diagnosis = 493.xx – a high-frequency diagnosis), diabetes (principal diagnosis = 250.xx – a medium-frequency diagnosis), and headache (principal diagnosis = 346.xx or 784.xx – a low-frequency diagnosis). For consistency, we restricted all of the data sets to patients who were 18 years or younger and used the original weights for the analysis. Although the ALOS estimates from the two sources are of similar magnitudes—only two of the differences are statistically significant—the standard errors of the estimates from the NHDS for diabetes and headache (the less frequent conditions) are substantially larger than those from the KID, owing to the relatively smaller NHDS sample.

Table 2: KID and NHDS Trends in Mean Length of Stay for Selected Principal Diagnoses

	Mean LOS		Standard Error		Unweighted Sample Size		*t*-value
	KID	NHDS	KID	NHDS	KID	NHDS	
Asthma							
1997	2.500	2.427	0.025	0.032	86,637	2,730	1.798
2000	2.392	2.198	0.023	0.034	82,104	2,221	4.726***
2003	2.350	2.296	0.023	0.035	101,168	2,307	1.289
Diabetes							
1997	3.067	3.241	0.053	0.163	10,833	343	-1.015
2000	2.857	2.643	0.021	0.152	13,798	431	1.395
2003	2.754	2.716	0.020	0.095	16,260	480	0.391
Headache							
1997	2.299	2.892	0.137	0.387	1,841	47	-1.444
2000	2.247	2.645	0.058	0.297	2,633	33	-1.315
2003	2.407	1.954	0.087	0.121	4,430	71	3.040**

Note: The original discharge weights were used to calculate means and standard errors.
**p-value <= .01
***p-value <= .001

Figure 3: Trends in Estimated Total Discharges, ALOS, and Mortality Rate, KID vs. NHDS

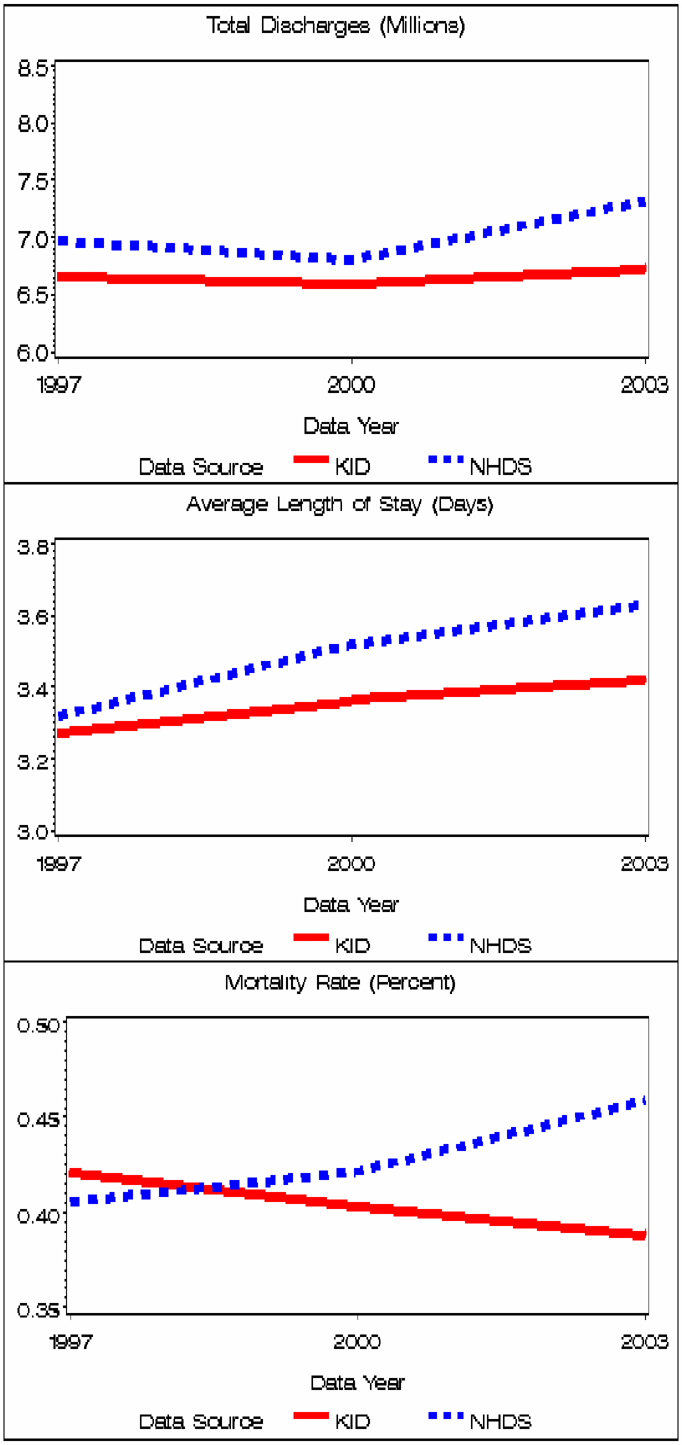
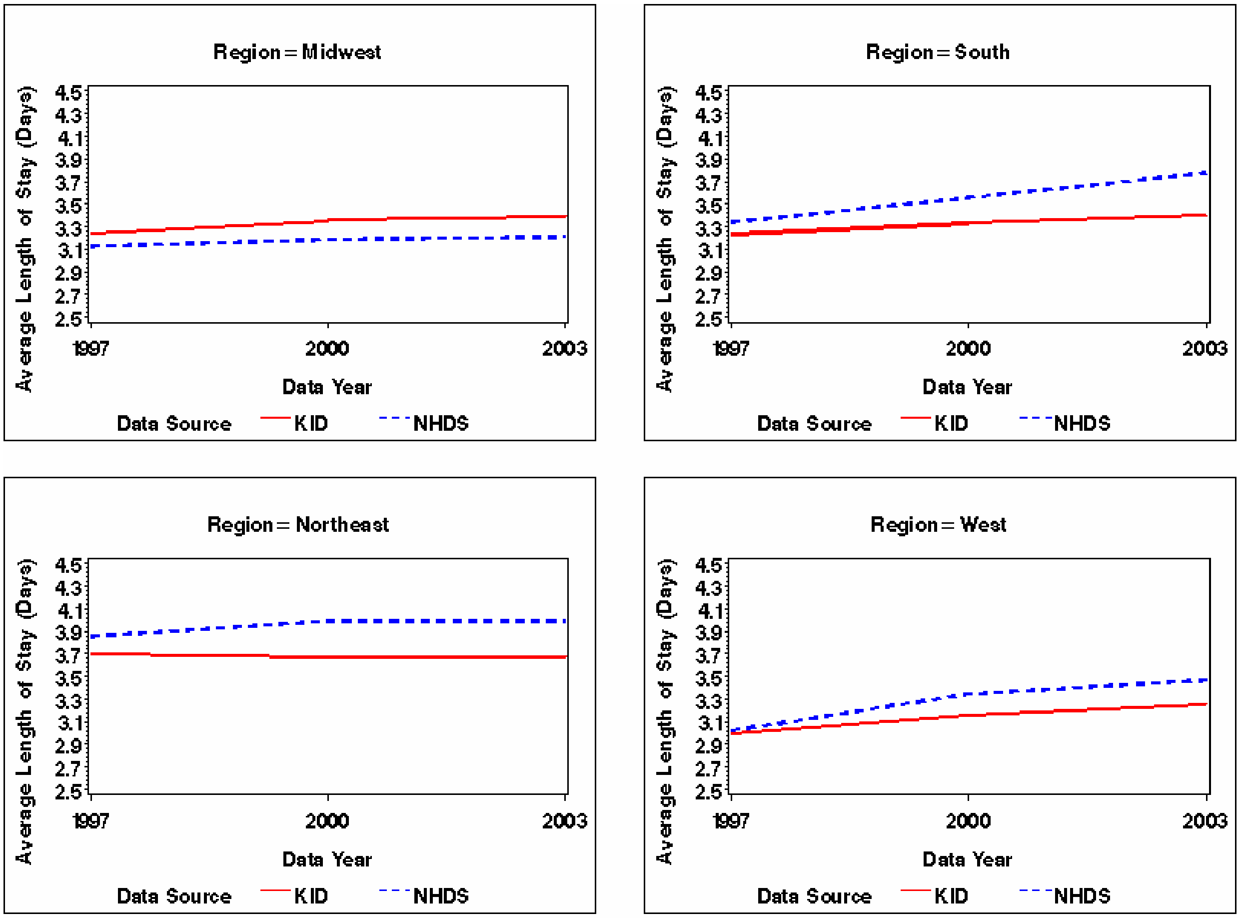


Figure 4: Trends for ALOS in 1997, 2000, and 2003, KID vs. NHDS



Note: Lengths of stay in excess of 90 days were recoded to *missing* in both databases.

EFFECTS OF THE 2000 SAMPLE DESIGN REVISIONS ON TREND ANALYSES

The 2000 sample design generated four modifications that should be considered. The modifications consisted of:

1. Adding 19- and 20-year-old patients to the 2000 and 2003 KID.
2. Excluding rehabilitation hospitals.
3. Changing the count of population discharges.
4. Redefining the hospital stratification variables.

Most of these revisions have been previously addressed, especially in the *KID Trends Report*. The following sections further describe these revisions and discuss their implications for KID trend analyses. The first two modifications affect discharge counts in the universe. Therefore, the first section addresses their effects together.

Adding 19- and 20-Year-Old Patients to the 2000 and 2003 KID

For 1997, the pediatric population was defined as discharges for patients in the age range 0 to 18, inclusive. The 2000 and 2003 KID include discharges with patients in the age range 0 to 20, inclusive. Therefore, to be consistent, any trends that include the 1997 KID should eliminate 19- and 20-year-old patients from the 2000 and 2003 KID.

Excluding Rehabilitation Hospitals and Changing the Count of Discharges

Table 3 shows the effects of removing the short-term rehabilitation facilities and the effects of using the AHA hospital discharge count on the estimated total U.S. discharge count (sum of discharge weights).

Table 3: Estimates of Total Pediatric Discharges in the U.S, 1997

Method	Discharge Estimate
Original 1997 Method	6,657,326
Dropping short-term rehab hospitals	6,645,549
Changing to AHA hospital counts	6,618,801
Dropping rehab and changing counts	6,607,653

The first line of Table 3 displays the sum of discharge weights presently in the 1997 KID, including rehabilitation facilities and using total facility discharge counts for the universe. The fourth line shows the sum of discharge weights that would have been obtained for 1997 using the 2000 definition of the count of discharges in the universe and eliminating rehabilitation facilities. The difference is 49,673 discharges (a 0.8 percent reduction resulting from both changes). It appears that the elimination of short-term rehabilitation hospital facilities (difference between row 1 and row 2) had a smaller impact than the method of counting discharges in the universe (difference between row 1 and row 3).

Figure 5 illustrates the effects of the population definitions on KID estimates of trends in total discharges. The difference in total discharges between 1997 and 2000 could have been slightly reduced, if the weights based on the 2000 discharge population definition were used for the 1997 KID.

Figure 5: KID Trend in Total Discharges, by Population Definition

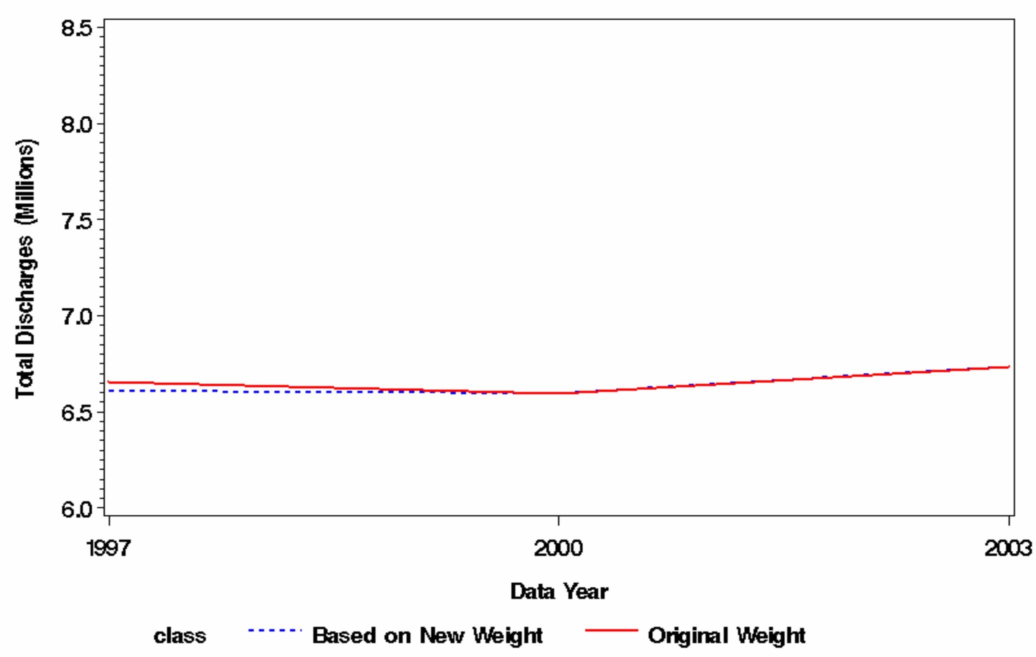


Table 4, Figure 6, and Figure 7 illustrate the effects of these changes on average lengths of stay (ALOS) and in-hospital mortality rates. As shown, the changes in the KID universe have little impact on both ALOS and overall mortality estimates, implying that these modifications in the KID sampling and weighting are minimal on some of the outcomes, such as ALOS and mortality.

Table 4: 1997 KID Estimates: Weights Based on 1997 Universe vs. 2000 Universe

Location	Average Length of Stay (Days)		In-Hospital Mortality Rate (%)	
	Original Weights	Based on New Weights	Original Weights	Based on New Weights
Northeast	3.70	3.69	0.43	0.43
Midwest	3.25	3.24	0.43	0.43
South	3.23	3.23	0.39	0.39
West	3.00	2.99	0.45	0.45
Total U.S.	3.27	3.27	0.42	0.42

Figure 6: KID Trend in Average Length of Stay[1], by Population Definition

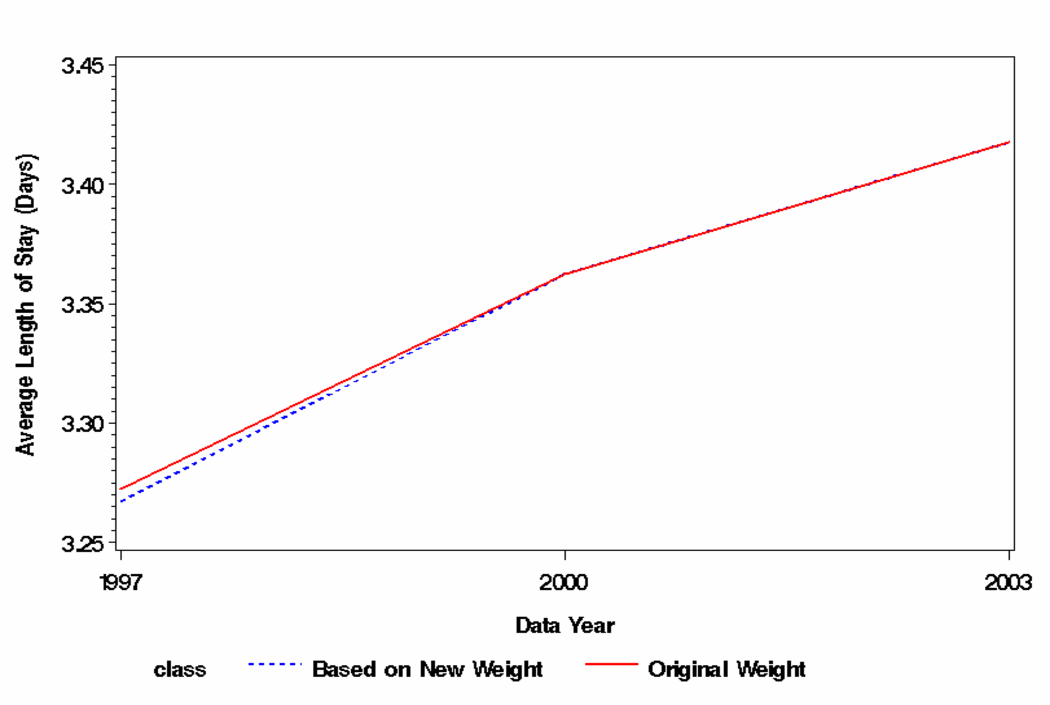
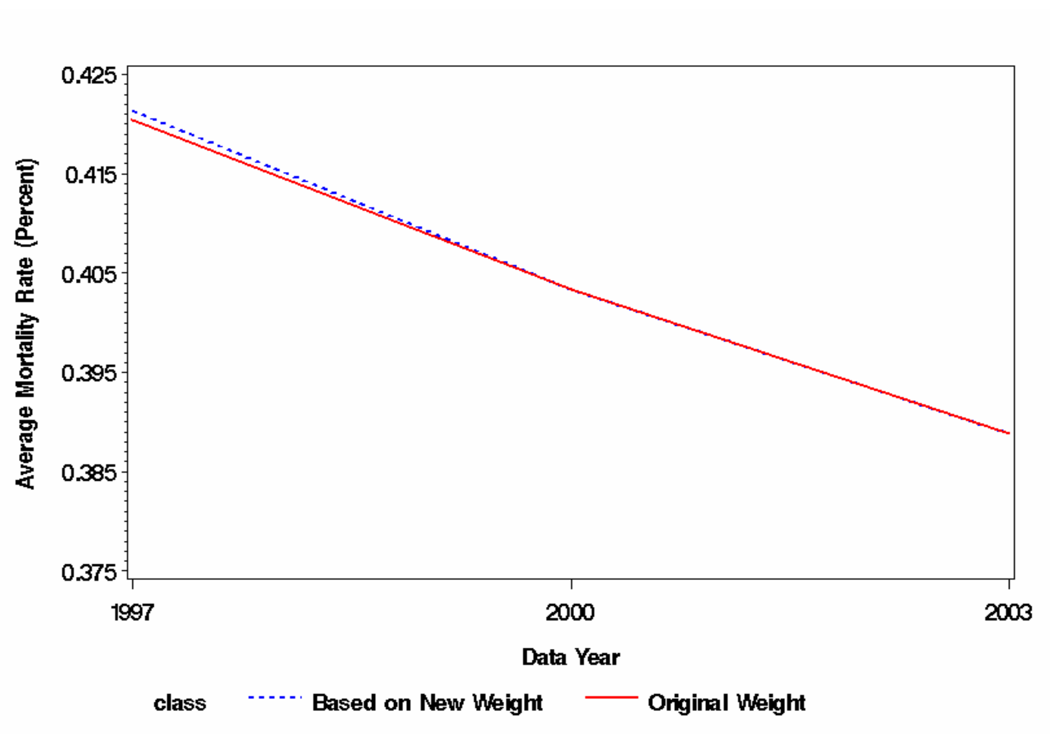


Figure 7: KID Trend in Mortality Rate, by Population Definition



[1] Note: Lengths of stay in excess of 90 days were recoded to *missing*.

Adjustments to the Stratification Variables

In redesigning the sample, we did not simulate KID discharge weights with and without adjustments to the stratification variables. These revisions are likely to have had only a very minor impact on most estimates because the same underlying variables were used to construct the strata in both designs, and the changes primarily addressed the problem of cells with low hospital frequencies.

However, to assess the impact of changing the stratification variables, we examined two scenarios using the 1997 KID, as presented in Table 5. First, we used the original weights based on the 1997 strata definitions, and then we recalculated the weights using the 2000 strata definitions. In addition, we eliminated rehabilitation hospitals and defined population discharge counts using 2000 criteria for both sets of weights to purge the comparisons of those revisions. Therefore, we examine only the effect of changes to the stratification variables.

Table 5: 1997 KID Estimates: Weights Based on 1997 Strata vs. 2000 Strata

Location	Average Length of Stay (Days)		In-Hospital Mortality Rate (%)	
	Original Weights	Based on New Weights	Original Weights	Based on New Weights
Northeast	3.69	3.68	0.43	0.43
Midwest	3.24	3.27	0.43	0.45
South	3.23	3.29	0.39	0.41
West	2.99	3.01	0.45	0.45
Total U.S.	3.27	3.29	0.42	0.43

Table 5 shows that the largest discrepancies for ALOS and in-hospital mortality are detected in the South. Nonetheless, the estimates are relatively stable across the two sets of weights.

Figures 8 and 9 reinforce that the changes in the stratification variables had a negligible impact on overall trends for average lengths of stay and in-hospital mortality rates, respectively.

Although the impact of changing the stratification variables was minimal, we will briefly examine each specific change, without estimating their individual effects.

Change in the Definition of Teaching Hospitals

This redefinition caused some hospitals to change strata from non-teaching to teaching. In the 1997 data, 14.3 percent of the hospitals were designated as teaching hospitals under the pre-2000 definition, as compared to 20.1 percent under the 2000 definition. In other words, about 7 percent of non-teaching hospitals in 1997 would have been designated teaching hospitals under the 2000 definition. Most likely, the “new” teaching hospitals previously appeared in the sample in proportion to their numbers in the hospital universe within each stratum. Consequently, the effect on sample estimates will be small. This change is most important when the KID definition of teaching hospitals is used in analyses involving 1997—for example, to estimate the effect of teaching status on an outcome. For such analyses, it would be best to standardize the definition using the 2000 designation.

Figure 8: KID Trend in Average Length of Stay, by Strata Definition

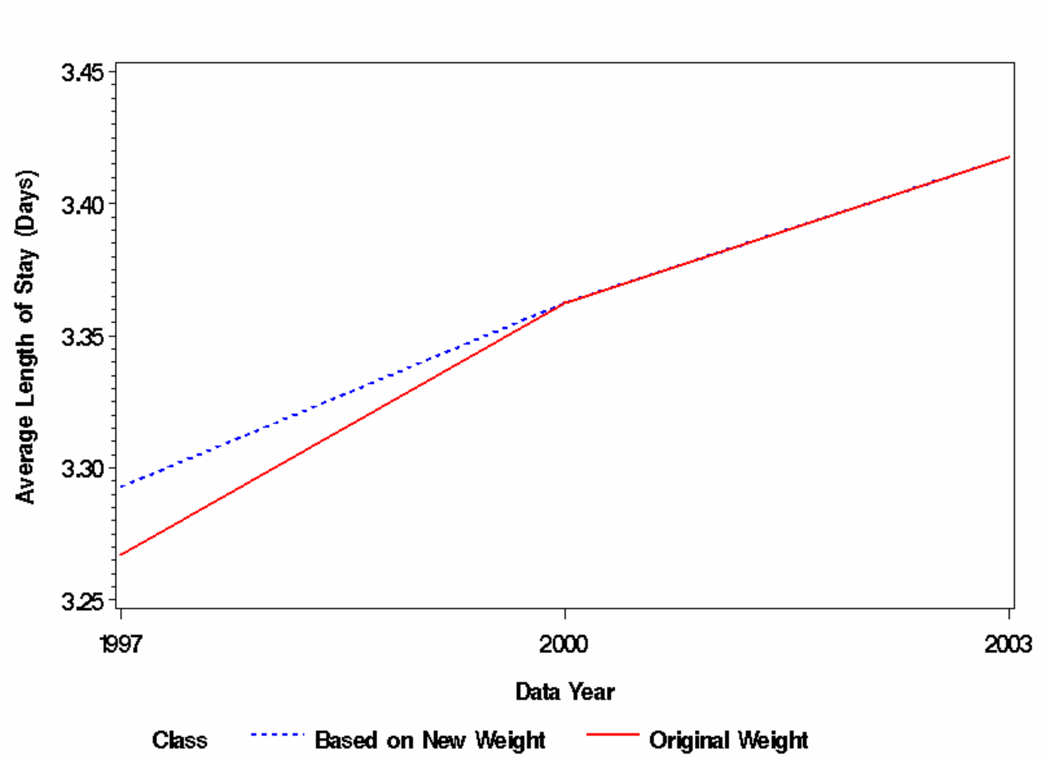
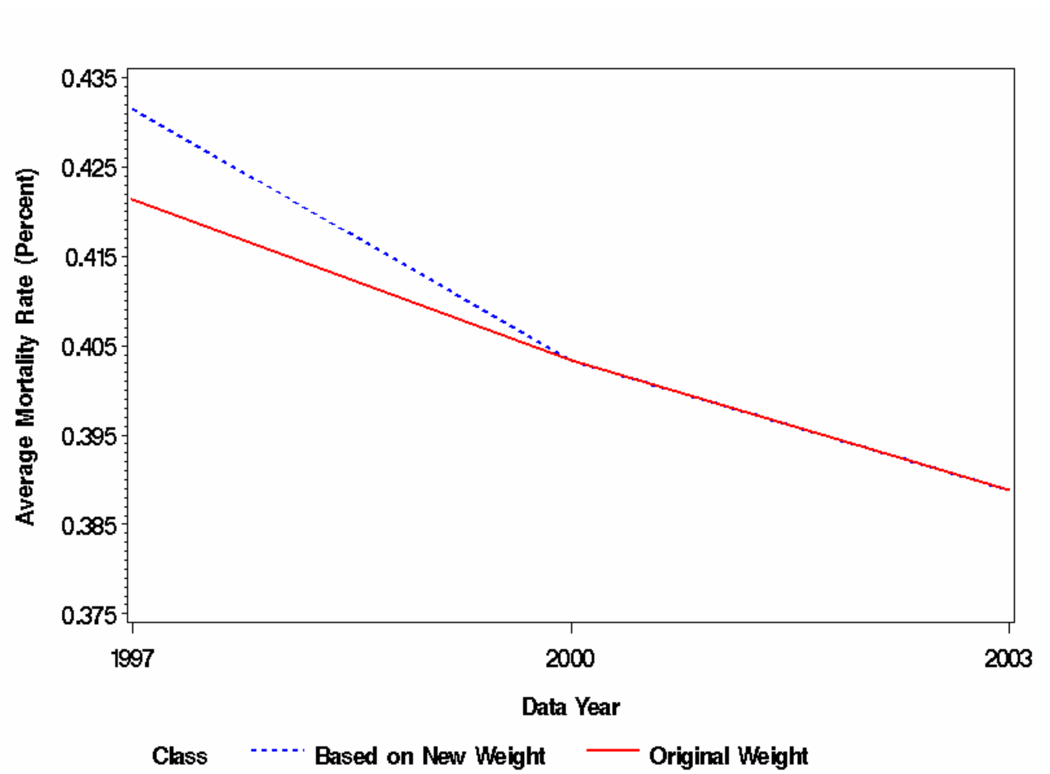


Figure 9: KID Trend in Mortality Rate, by Strata Definition



Change in the Bed Size Categories

This revision caused some hospitals to move from one bed size stratum to another. However, it is expected to have little impact on most analyses. The pre-2000 bed size cut-points are as follows:

Table 6: Bed Size Categories in the 1997 Sample Design

Location/Teaching	Small	Medium	Large
Rural	1 – 49	50 – 99	100+
Urban Non-teaching	1 – 99	100 – 199	200+
Urban Teaching	1 – 299	300 – 499	500+

The new 2000 bed size cut-points are:

Table 7: Bed Size Categories in the 2000–2003 Sample Design

Region	Location/Teaching	Small	Medium	Large
Northeast	Rural	1 – 49	50 – 99	100+
	Urban Non-teaching	1 – 124	125 – 199	200+
	Urban Teaching	1 – 249	250 – 424	425+
Midwest	Rural	1 – 29	30 – 49	50+
	Urban Non-teaching	1 – 74	75 – 174	175+
	Urban Teaching	1 – 249	250 – 374	375+
South	Rural	1 – 39	40 – 74	75+
	Urban Non-teaching	1 – 99	100 – 199	200+
	Urban Teaching	1 – 249	250 – 449	450+
West	Rural	1 – 24	25 – 44	45+
	Urban Non-teaching	1 – 99	100 – 174	175+
	Urban Teaching	1 – 199	200 – 324	325+

Under the 2000 definitions, some hospitals in the 1997 sample changed bed size categories as follows:

Table 8: Number and Percentage of 1997 KID Hospitals in Each Bed Size Category: 1997 Definition vs. 2000 Definition

	2000 Definition			
1997 Definition	**Small**	**Medium**	**Large**	**Total**
Small	**651** **(26.3)**	323 (13.0)	14 (0.6)	988 (39.8)
Medium	77 (3.1)	**509** **(20.5)**	239 (9.6)	825 (33.3)
Large	11 (0.4)	41 (1.7)	**615** **(24.8)**	667 (26.9)
Total	739 (29.8)	873 (35.2)	868 (35.0)	2,480 (100.0)

The bolded numbers on the diagonal represent 1997 KID hospitals that would *not* have changed their bed size category (72 %) under the 2000 classification rules. Consequently, about 28 percent of 1997 sample hospitals would have changed bed size categories under the 2000 classification rules, mostly moving to a higher bed size category. Again, this is probably only important for analyses that involve the KID definition of bed size categories. For reasons of confidentiality, AHRQ is prevented from releasing each hospital's exact number of beds. Therefore, trend studies involving 1997 might prefer to employ other measures of hospital size, such as total discharges.

Change in Ownership Strata

This change caused some hospitals in low-frequency ownership categories to be combined with higher frequency categories. It is expected to have little effect on most analyses, except for the use of ownership categories in analyses. Analysts can collapse the 1997 ownership categories to match the 2000 ownership categories. However, the new categories are less refined for some regions than for others. Table 9 compares the distribution of the 1997 KID sample hospitals under the two classification schemes.

In the Northeast, only about 8 percent of the 1997 KID hospitals were other than private non-profit. This is essentially why we did not stratify on ownership in the Northeast after the 1997 sample. However, in other regions, the ownership categories were retained to varying extents. While the 2000 ownership categories are more sensible for the purpose of stratification, the pre-2000 ownership categories are more useful for purposes of hospital analyses because they are consistently defined across all stratification variables, including region. Unfortunately, concerns for hospital confidentiality prevent the release of each hospital's detailed ownership category. Thus, trend studies of hospital ownership that include 1997 might be better served by data other than the KID.

Adjustments for 2000 Sample Design Revisions

It appears that many of the issues caused by the 2000 sample redesign can be addressed by removing rehabilitation hospitals and recalculating discharge weights using the 2000 definition of population discharges. The effects of the 2000 sample redesign appear to be largest for estimates of totals and to be relatively minor for estimates of means and rates with discharge denominators. A supplemental file containing new discharge weights for the 1997 KID is now available to address the removal of rehabilitation hospitals and the change in the AHA hospital discharge counts used to define the discharge universe (http://www.hcup-us.ahrq.gov/db/nation/kid/kiddbdocumentation.jsp).

Table 9: Ownership Distribution of 1997 KID Hospitals by Region, Comparing 1997 and 2000 Ownership Categories

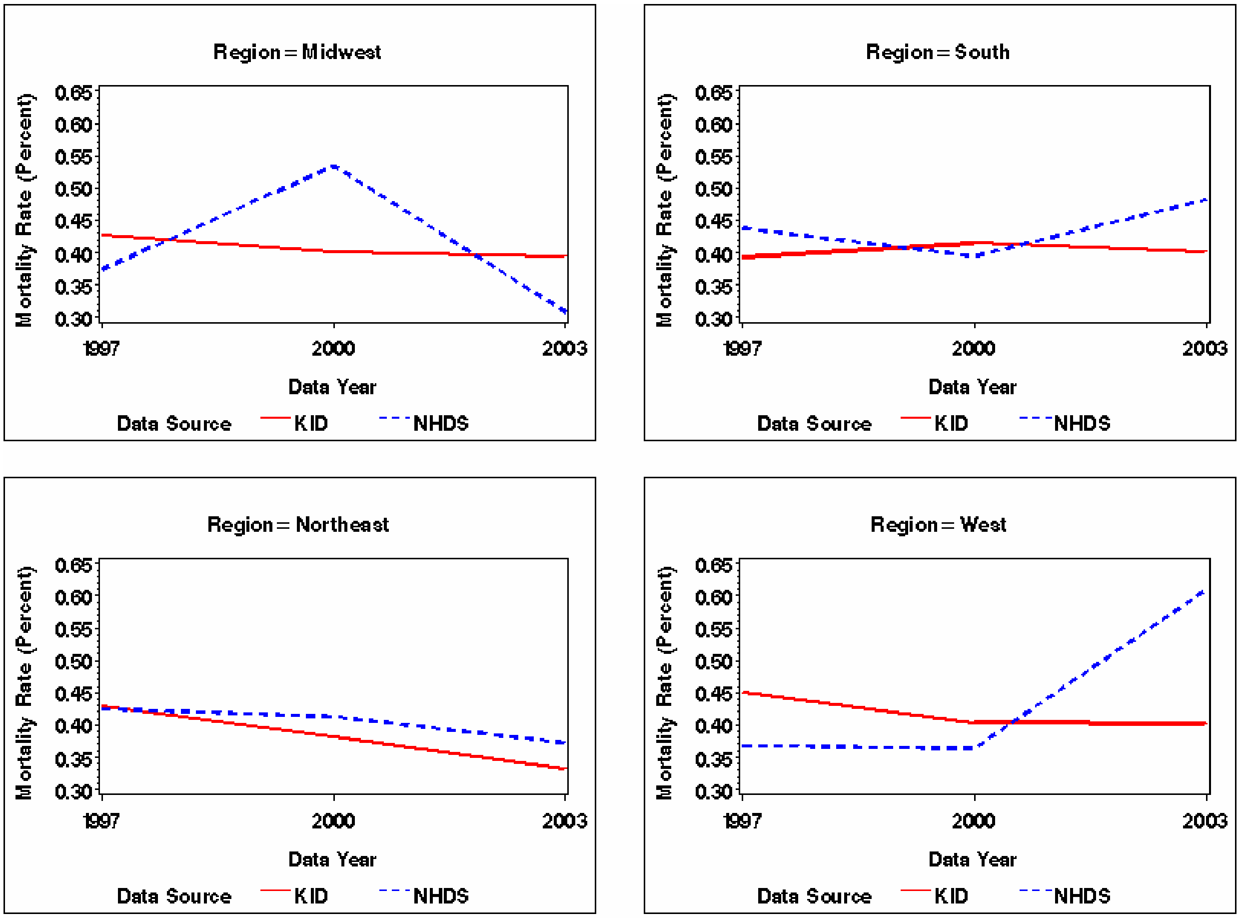
1997 Ownership Categories	2000 Ownership Categories: Collapsed government or private	Government, non-federal, public	Private, not for profit, voluntary	Private, investor-owned	Collapsed private
Northeast Region					
Public	32	0	0	0	0
Private, not for profit	549	0	0	0	0
Private, for profit	14	0	0	0	0
Midwest Region					
Public	20	164	0	0	0
Private, not for profit	216	0	0	0	201
Private, for profit	20	0	0	0	6
South Region					
Public	13	115	0	0	0
Private, not for profit	57	0	168	0	14
Private, for profit	5	0	0	159	12
West Region					
Public	28	145	0	0	0
Private, not for profit	105	0	221	0	78
Private, for profit	13	0	0	115	10

EFFECTS OF CHANGES TO THE SAMPLING FRAME ON TRENDS

As illustrated thus far, while it may be possible to adjust analyses for changes in the 2000 KID sample redesign, it may be difficult to adjust for major changes in the sampling frame. For example, significant numbers of states were added to the 2000 and 2003 KID. Figure 10 presents estimates from both the KID and the NHDS for trends in in-hospital mortality rates for each region.

Since the 2000 and 2003 KID are more representative as compared to the 1997 KID, KID estimates for the 1997 period are more likely to be biased compared with KID estimates from the 2000-2003 period, which should be highly accurate for the Northeast and South. In addition, we show later (Table 10) that the standard deviation of the sample discharge weights decreases by 43 percent between 1997 and 2000, which results in a substantial decrease in the variance of KID estimates.

Figure 10: Trends for In-Hospital Mortality Rate 1997, 2000, and 2003, KID vs. NHDS



HOW SHOULD CHANGES TO DATA ELEMENTS BE ADDRESSED?

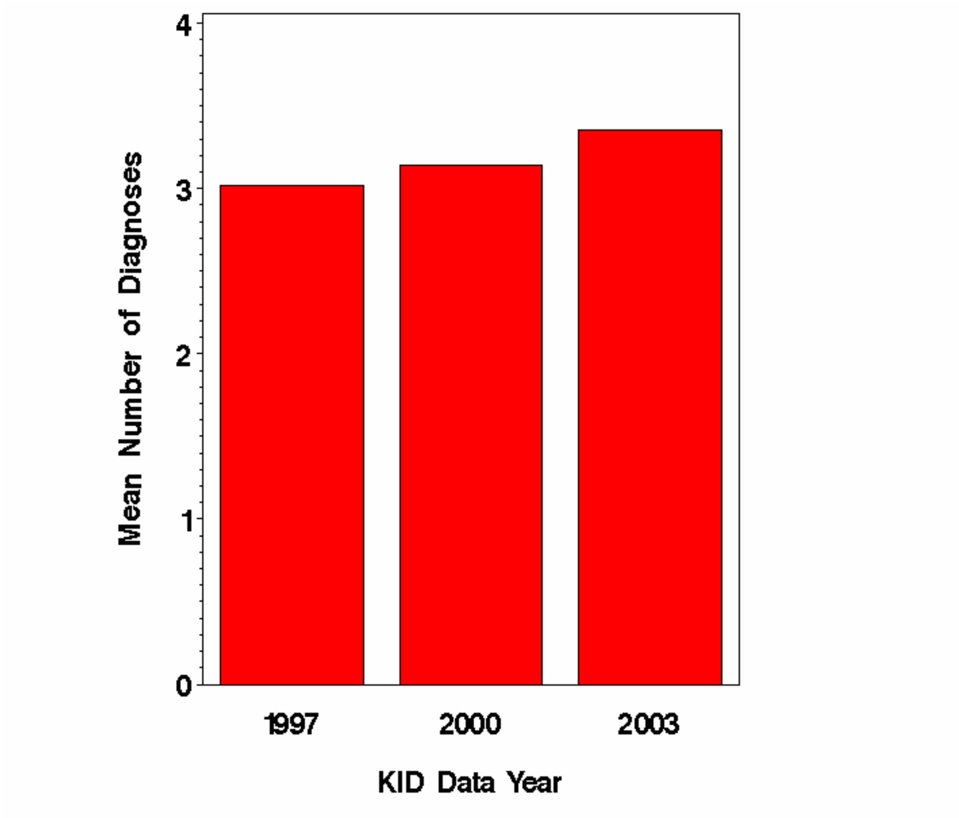
To What Extent Should ICD Coding Issues Be Considered?

Number of codes

Each KID record contains up to 15 ICD-9 diagnosis codes and another 15 ICD-9 procedure codes. It is important to recognize that not all state discharge databases contain 15 codes. Some states captured only 5 or 10 codes, while other states captured up to 30 codes, and the number of available slots for codes changed over time in some states. In any case, the KID retains up to 15 of these original codes because analyses demonstrated that this captures the vast majority of diagnoses and procedures. For 2003, only about 0.31 percent of the discharges in the KID originally had more than 15 diagnoses coded. This percentage was even smaller for earlier years (i.e., 0.18 percent for 2000 and 0.16 percent for 1997).

Figure 11 displays the trend in the average number of diagnoses coded in the KID from 1997 to 2003. The number remains relatively stable over this period, from 3.02 in 1997 to 3.36 in 2003. The number of codes may be important for some analyses because secondary diagnoses provide information on severity and comorbidities. States (or years) with more codes may appear to have a more complex case-mix than states with fewer codes. Also, conditions that tend to be coded near the end of the vector may occur more frequently in states (or years) with more codes.

Figure 11: Mean Number of Diagnoses Coded, KID 1997-2003



Masking and recoding for cases with sensitive diagnoses and procedures

For completeness, we point out that for records with sensitive diagnoses and procedures, some states mask or recode certain data elements, such as ages, dates, and physician identifiers. These recodes are unlikely to affect most analyses. Some states completely exclude records with sensitive diagnoses. For example, beginning in 2001, Iowa excluded records in MDC 25 (HIV infections) and some behavioral health records including chemical dependency care or psychiatric care. As another example, in 2003, Florida did not provide admission month to HCUP. For details, refer to the documentation that accompanies the KID data files (*Sources of KID Data and State-specific Restrictions,* and *Description of Data Elements, the HCUP Kids' Inpatient Database*).

Annual ICD-9-CM code changes

Any trend analysis of hospital treatments for specific medical conditions should entail a careful consideration of ICD-9-CM codes for the specific conditions in effect during the study period.

The complete list of changes is too lengthy to include in this report. However, some examples of code changes are:

- For asthma (493.xx), fifth digits were added in 2000 to identify asthma with acute exacerbation.
- For convulsions (780.3x), fifth digits of 1 and 9 were added in 1997 to differentiate febrile and other convulsions.
- For acute laryngitis and tracheitis (464.0x – 464.5x), fifth digits were added in 2000 to indicate whether or not there was obstruction with acute laryngitis and unspecified supraglottitis.

<u>Other variable changes</u>

Other variables on the KID discharge records have also changed over time. For instance, the categorical variable "sex" was changed to the indicator variable "female" starting with the 2000 KID and the categorical variable indicating CCS category for principal diagnosis, DCCHPR1, was changed to DXCCS1. As another example, the 1997 KID contains neither the AHA identifiers nor the state postal codes for hospitals.

In addition, variable names and data elements in the hospital-level file have also changed over the years. Table A.1 lists the data elements contained in the 2003 hospital file, along with versions of those variables in the prior year hospital files.

It is fairly easy to adjust for these revisions through simple computer programming statements.

HOW SHOULD DISCHARGE WEIGHTS BE USED?

Should Weights Be Incorporated in Trend Analyses?

Weights are usually required to obtain unbiased estimates of descriptive statistics such as sums, means, and standard errors. In some instances, unweighted means provide good estimates, but they are rarely better estimates (Korn and Graubard, 1999). Obviously, unweighted means are equal to weighted means when the weights are constant. Also, unweighted means nearly equal weighted means on outcomes for which there is little variation.

Table 10 reveals that the variation in KID discharge weights decreased steadily over the period 1997 to 2003. This decrease is associated with the expanding sampling frame. As more states and hospitals were added to the frame, the number of discharges significantly increased. For example, there were 3,445 hospitals in the 2003 sampling frame, representing a 23.5% increase from the 2000 KID and a 36.4% increase from the 1997 KID. Also, consistent with the increase in hospital sample size, the average discharge weight decreased by about 0.5 over this period. Therefore, in the KID, unweighted means tend to be closer to weighted means as the years increase. Nevertheless, we generally recommend the use of weights for descriptive statistics.

Table 10: Mean and Standard Deviation of Discharge Weights, KID 1997, 2000, and 2003

Year	Mean Discharge Weight	Standard Deviation
1997	3.49	5.16
2000	2.90	4.46
2003	2.48	2.94

Quite often, researchers do not use sample weights in regression analyses, which are used to better understand the relationship between a dependent variable and a set of independent or explanatory variables. There is some debate concerning the use of sample weights in regression analyses (Korn and Graubard, 1999). We will not repeat the arguments here. However, we recommend that the weights be used, if possible. Even in statistical routines that fail to account for the sample design, the sample weights can usually be used, although the analyst might have to normalize the weights to sum to the sample size and provide better estimates of error and statistical significance. That said, some procedures that might be useful for trends analysis do not usually allow the use of sample weights. One example is times series analysis.

WHICH STATISTICAL METHODS SHOULD BE USED?

Various statistical techniques are available to analyze trends or time series depending on the number and spacing of time points and on the outcome or response variable under study. Usually, there is one response variable, such as length of stay, and one or more predictor or explanatory variables.

Descriptive statistics can be analyzed using standard statistical routines for survey data (see Houchens and Elixhauser, 2001). Several types of regression analysis can be conducted, including simple and multiple linear regression for continuous outcomes, logistic and probit regression for binary outcomes, and Poisson or negative binomial regression for count outcomes.

Modules for multiple linear regression incorporating complex survey designs are available using the SAS SURVEYREG procedure (SAS Institute, 2004), the Stata SVYREGRESS command (StataCorp, 2003), and the SUDAAN REGRESS procedure (Research Triangle Institute, 2004). Logistic and probit regression procedures for binary outcomes that incorporate survey design elements are also available in SAS (SURVEYLOGISTIC procedure), Stata (SVYLOGIT and SVYPROBIT commands), and SUDAAN (LOGISTIC or RLOGISTIC procedure). Procedures for count data, such as Poisson regression and negative binomial regression, which incorporate complex survey design elements, are available in SUDAAN (LOGLINK procedure) and Stata (SVYPOISSON, SVYNBREG, and SVYGNBREG commands).

If regressions are performed using only a subset of the KID, estimated standard errors might be incorrect if the subset does not contain at least one observation from every stratum. The example analysis in the following section illustrates the differences that can occur. For regression procedures, statements for designating subpopulations are available in SUDAAN (SUBPOPN statement) and Stata (SUBPOP option). However, for trend studies that use multiple years of the KID involving many millions of observations, the analyst might prefer to reduce the size of the analysis file to the subset of interest. It is still possible to get appropriate standard errors by augmenting the subset with “dummy” observations, one for each KID stratum. This technique is explained in Appendix B of Houchens and Elixhauser (2001).

Hierarchical or multilevel regressions might be appropriate for incorporating hospital characteristics as explanatory variables (Snijders and Bosker, 1999; Singer, 2003). These models are appropriate for nested observations, such as students nested within teachers nested within schools. In the context of KID trend studies, discharges are nested within hospitals. Some hospitals are contained in multiple years of the KID. Consequently, the nesting structure could also be characterized as discharges nested within years nested within hospitals (repeated measures on the same hospital).

Hierarchical models account separately for the discharge-level error, the hospital-level error, and the correlation among discharges within hospitals. Also, these models can account for serial correlation over time. Hierarchical models can be fit using SAS PROC MIXED (Singer, 1998), Mplus (Muthen & Muthen, 1998–2004), HLM (Raudenbush, Bryk, Chong, and Congdon, 2000), and MLwiN (Rasbash, et al., 2002). These statistical routines allow the use of sample weights. However, they do not account directly for other survey design elements. Instead, the sample design must be modeled. For example, hospital-level variation is modeled separately from discharge-level variation, and hospital stratification variables are often included as independent variables for the hospital-level model.

One explanatory variable that is always of interest in trend analyses is time. How is time measured? KID trends can be estimated in years (discharge year), quarters (discharge quarter), or months (admission month). The choice of time measure depends on the goals of the study and the nature of the trend. If the analysis is concerned with seasonality, then time should be measured in quarters or months.

Care must be exercised when using the month variable. The KID contains *admission* month and *discharge* year. The discharge quarter and length of stay can be used to help estimate the admission year corresponding to the admission month. For example, if the admission month is December and the discharge quarter is the first or second quarter, then the admission year is probably one year earlier than the discharge year. However, using admission dates to measure time raises another set of problems because the KID is a discharge database, not an admissions database.

The analyst could also try to impute the *discharge* month from the combination of admission month, discharge quarter, and length of stay. For example, if the admission month is December, the discharge quarter is January-March, and the length of stay is under 30 days, it would be reasonable to impute a discharge month of January. However, many other combinations are much less clear-cut. For instance, if the length of stay was 45 days in the last example, then the discharge month could be either January or February. For this reason, we recommend using discharge quarter to study seasonality, if that is adequate to the task.

An Example of Trend Analysis: Lengths of Stay and Hospital Charges for Pediatric Admissions for Lymphatic Malformations

The analyses here are intended to be illustrative rather than prescriptive. We propose some steps that analysts can take and suggest some statistical methods that could be useful.

However, a variety of other approaches and other methods might be appropriate, depending on the goals of the study.

As briefly described earlier, Harsha et al. (2005) estimated patterns in the average length of stay (ALOS) and hospital charges for lymphatic malformations (LM) using the 1997 and 2000 versions of the KID. We added the 2003 KID to examine trends in average length of stay (ALOS) and hospital charges for this specific diagnosis. Lymphatic malformations (LM) have a diagnosis of 228.1. A search of the ICD-9 code conversion table reveals that no change was made to this code over the course of the study.

Table 11 describes the demographic characteristics of lymphatic malformations admissions across the data years. We combined the original categories of "Asian/Pacific Islander," "Native American," and "Other" into the new "Other" group.

Table 11: Demographic Characteristics of Lymphatic Malformations Admissions

Characteristics	1997	2000	2003
	Number†, (s.e)	Number† (s.e)	Number† (s.e)
Male	872 (69)	863 (79)	745 (62)
Female	795 (75)	767 (72)	727 (65)
Age in Years (Mean/SE)	3.98 (0.31)	3.67 (0.29)	3.52 (0.19)
Age			
<1	655 (48)	756 (82)	602 (51)
1-3 yrs old	407 (59)	362 (40)	409 (48)
4-18 yrs old	607 (68)	513 (52)	480 (44)
Race/Ethnicity			
White	756 (88)	741 (89)	506 (56)
Black	150 (30)	155 (28)	117 (20)
Hispanic	209 (42)	345 (56)	276 (47)
Other	145 (26)	130 (27)	115 (23)
Missing	407 (79)	258 (68)	475 (80)

†: Weighted national estimate.

The mean age at admission for LM was 3.98 years in 1997, 3.67 years in 2000, and 3.52 years in 2003, whereas the median age was 1 for all years (see Table 11 and Figure 12). Figure 12 exhibits a right-skewed unimodal pattern in which the majority of cases occurred younger than 1 year old irrespective of the data year.

For all LM admissions, as shown in Figure 13, the average lengths of stay (ALOS) were 5.16 days in 1997, 5.21 days in 2000, and 5.38 days in 2003, which implies that the ALOS has been increasing slightly over the study period. As exhibited in Figure 14, the mean hospital charges for the estimated 1668 LM admissions have also increased over the study period. These results are consistent with the findings in the original article, and we demonstrate that the upward trend in resource use has continued beyond 2000.

Figure 12: Age of Children Admitted with Lymphatic Malformations

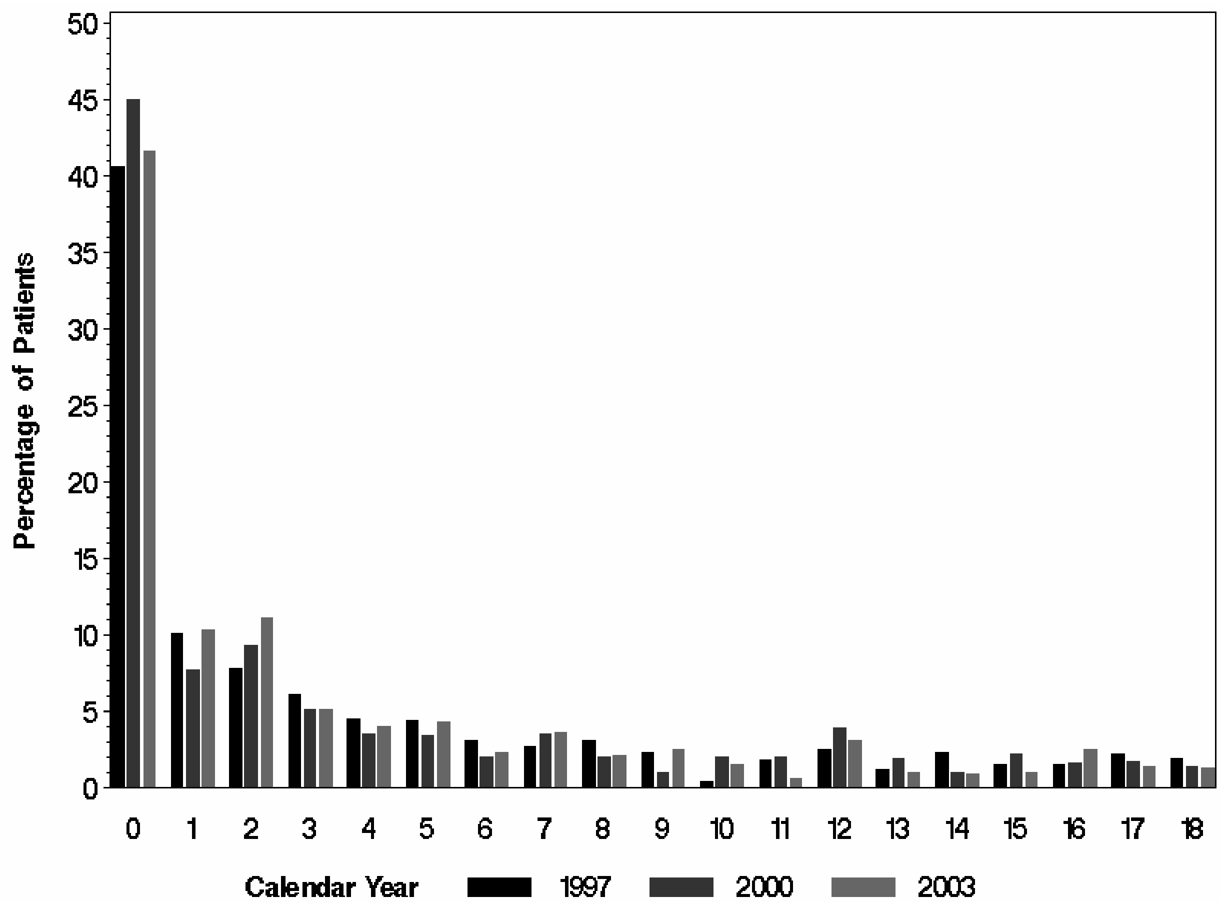


Figure 13: Trend in Average Length of Stay for Lymphatic Malformations Admissions

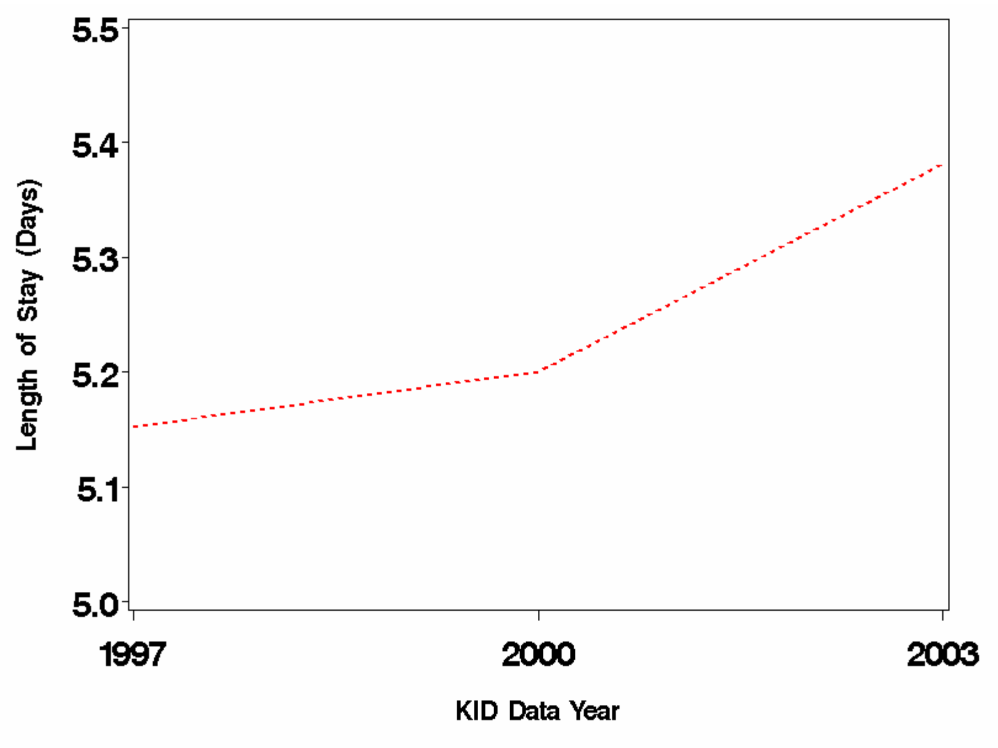
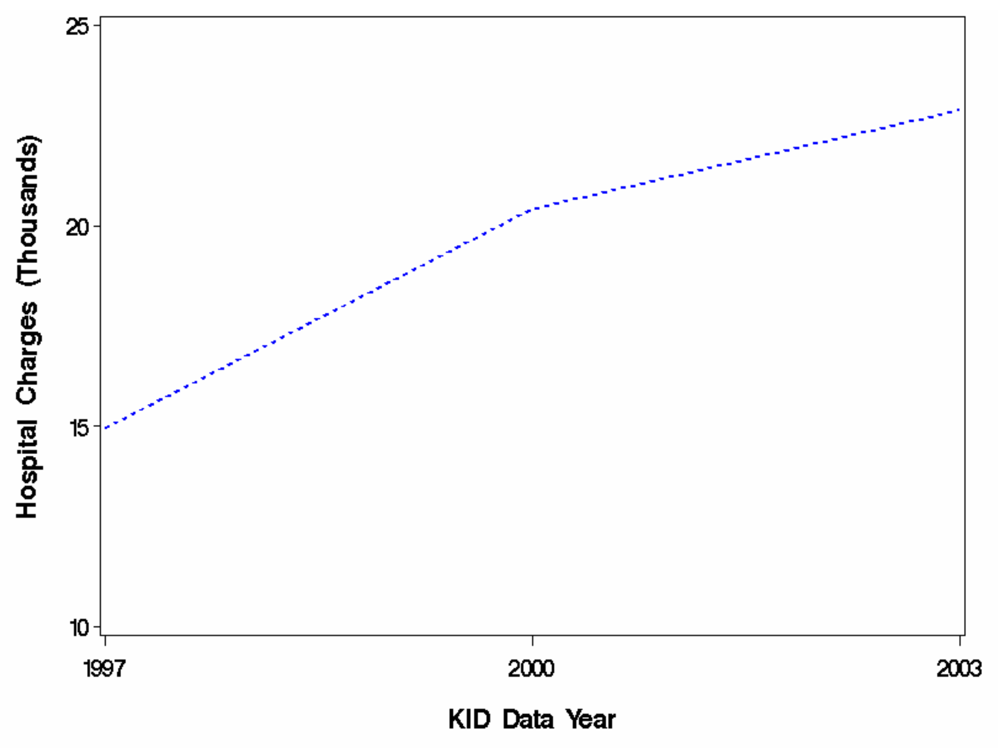


Figure 14: Trend in Hospital Charges for Lymphatic Malformations Admissions



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APPENDIX A

The following table is reproduced from KID documentation and summarizes changes over time in data element names, the years for which each data element is available, and the states that do not provide each data element.

Table A-1: Availability of Data Elements in the 1997, 2000, and 2003 Kids' Inpatient Database (KID)

The first column specifies the HCUP data element name. The second column indicates the file(s) in which the data element appears. The next column describes how the data element is defined in the KID. The remaining columns refer to data years. Cells marked with "Yes" indicate that the data element is available for that year of the KID. Cells marked with "--" indicate that the data element is not available for that year of the KID. Not all data elements are available for all states. For example, all years of the KID contain the data element for the American Hospital Association hospital identifier (IDNUMBER), but not all states allow the release of this information. Refer to the *Description of Data Elements* for information on how the HCUP data elements are defined. *Summary Statistics* are available with means on all numeric data elements and frequency distributions on most categorical data elements.

HCUP Data Element	File(s)	Coding Notes	1997	2000	2003	HCUP Data Element
ADAYWK	Core	Admission day of week: (1) Sunday, (2) Monday, (3) Tuesday, (4) Wednesday, etc.	Yes	--	--	ADAYWK
AGE	Core	Age in years at admission coded 0-124 years	Yes	Yes	Yes	AGE
AGEDAY	Core	Age in days is coded 0-365 only when the age in years is less than 1 year	Yes	Yes	Yes	AGEDAY
AGEMONTH	Core	Age in months is coded 0-131 only when age in years is less than eleven	Yes	Yes	Yes	AGEMONTH
AHAID	Hospital	AHA hospital identifier that matches AHA Annual Survey of Hospitals (not available for all states)	--	Yes	Yes	AHAID
AMONTH	Core	Admission month coded from (1) January to (12) December	Yes	Yes	Yes	AMONTH
APRDRG	Severity	All Patient Refined DRG	--	--	Yes	APRDRG
APRDRG_Risk_Mortality	Severity	All Patient Refined DRG: Risk of Mortality Subclass	--	--	Yes	APRDRG_Risk_Mortality
APRDRG_Severity	Severity	All Patient Refined DRG: Severity of Illness Subclass	--	--	Yes	APRDRG_Severity
APSDRG	Severity	All-Payer Severity-adjusted DRG	--	--	Yes	APSDRG
APSDRG_Charge_Weight	Severity	All-Payer Severity-adjusted DRG: Charge Weight	--	--	Yes	APSDRG_Charge_Weight
APSDRG_LOS_Weight	Severity	All-Payer Severity-adjusted DRG: Length of Stay Weight	--	--	Yes	APSDRG_LOS_Weight
APSDRG_Mortality_Weight	Severity	All-Payer Severity-adjusted DRG: Mortality Weight	--	--	Yes	APSDRG_Mortality_Weig ht
ASOURCE	Core	Admission source, uniform coding: (1) ER, (2) another hospital, (3) another facility including long-term care, (4) court/law enforcement, (5) routine/birth/other	Yes	Yes	Yes	ASOURCE
ASOURCE_X	Core	Admission source, as received from data source using State-specific coding	--	Yes	Yes	ASOURCE_X
ASOURCEUB92	Core	Admission source (UB-92 standard coding) for KID beginning in 2003	--	--	Yes	ASOURCEUB92

ATYPE	Core	Admission type, uniform coding: (1) emergency, (2) urgent, (3) elective, (4) newborn, (6) other	Yes	Yes	Yes	ATYPE
AWEEKEND	Core	Admission on weekend: (0) admission on Monday-Friday, (1) admission on Saturday-Sunday	--	Yes	Yes	AWEEKEND
BWT	Core	Birth weight in grams	--	Yes	Yes	BWT
CHLDWT	Hospital	Weight to pediatric non-births in universe	--	Yes	--	CHLDWT
CHLDWT_U	Hospital	Weight to pediatric non-births in universe for the 1997 KID	Yes	--	--	CHLDWT_U
CHLDWTcharge	Hospital	Weight to pediatric non-births in universe for estimates of total charges. In 2000 only, this weight is used to create national estimates for analyses that involve total charges.	--	Yes	--	CHLDWTcharge
CM_AIDS	Severity	AHRQ comorbidity measure: Acquired immune deficiency syndrome	--	--	Yes	CM_AIDS
CM_ALCOHOL	Severity	AHRQ comorbidity measure: Alcohol abuse	--	--	Yes	CM_ALCOHOL
CM_ANEMDEF	Severity	AHRQ comorbidity measure: Deficiency anemias	--	--	Yes	CM_ANEMDEF
CM_ARTH	Severity	AHRQ comorbidity measure: Rheumatoid arthritis/collagen vascular diseases	--	--	Yes	CM_ARTH
CM_BLDLOSS	Severity	AHRQ comorbidity measure: Chronic blood loss anemia	--	--	Yes	CM_BLDLOSS
CM_CHF	Severity	AHRQ comorbidity measure: Congestive heart failure	--	--	Yes	CM_CHF
CM_CHRNLUNG	Severity	AHRQ comorbidity measure: Chronic pulmonary disease	--	--	Yes	CM_CHRNLUNG
CM_COAG	Severity	AHRQ comorbidity measure: Coagulopathy	--	--	Yes	CM_COAG
CM_DEPRESS	Severity	AHRQ comorbidity measure: Depression	--	--	Yes	CM_DEPRESS
CM_DM	Severity	AHRQ comorbidity measure: Diabetes, uncomplicated	--	--	Yes	CM_DM
CM_DMCX	Severity	AHRQ comorbidity measure: Diabetes with chronic complications	--	--	Yes	CM_DMCX
CM_DRUG	Severity	AHRQ comorbidity measure: Drug abuse	--	--	Yes	CM_DRUG
CM_HTN_C	Severity	AHRQ comorbidity measure: Hypertension, uncomplicated and complicated	--	--	Yes	CM_HTN_C
CM_HYPOTHY	Severity	AHRQ comorbidity measure: Hypothyroidism	--	--	Yes	CM_HYPOTHY
CM_LIVER	Severity	AHRQ comorbidity measure: Liver disease	--	--	Yes	CM_LIVER
CM_LYMPH	Severity	AHRQ comorbidity measure: Lymphoma	--	--	Yes	CM_LYMPH
CM_LYTES	Severity	AHRQ comorbidity measure: Fluid and electrolyte disorders	--	--	Yes	CM_LYTES
CM_METS	Severity	AHRQ comorbidity measure: Metastatic cancer	--	--	Yes	CM_METS
CM_NEURO	Severity	AHRQ comorbidity measure: Other neurological disorders	--	--	Yes	CM_NEURO
CM_OBESE	Severity	AHRQ comorbidity measure: Obesity	--	--	Yes	CM_OBESE
CM_PARA	Severity	AHRQ comorbidity measure: Paralysis	--	--	Yes	CM_PARA
CM_PERIVASC	Severity	AHRQ comorbidity measure: Peripheral vascular disorders	--	--	Yes	CM_PERIVASC

CM_PSYCH	Severity	AHRQ comorbidity measure: Psychoses	--	--	Yes	CM_PSYCH
CM_PULMCIRC	Severity	AHRQ comorbidity measure: Pulmonary circulation disorders	--	--	Yes	CM_PULMCIRC
CM_RENLFAIL	Severity	AHRQ comorbidity measure: Renal failure	--	--	Yes	CM_RENLFAIL
CM_TUMOR	Severity	AHRQ comorbidity measure: Solid tumor without metastasis	--	--	Yes	CM_TUMOR
CM_ULCER	Severity	AHRQ comorbidity measure: Peptic ulcer disease excluding bleeding	--	--	Yes	CM_ULCER
CM_VALVE	Severity	AHRQ comorbidity measure: Valvular disease	--	--	Yes	CM_VALVE
CM_WGHTLOSS	Severity	AHRQ comorbidity measure: Weight loss	--	--	Yes	CM_WGHTLOSS
CMPBWT	Hospital	Weight to complicated births in universe	--	Yes	--	CMPBWT
CMPBWT_U	Hospital	Weight to complicated births in universe in 1997 KID	Yes	--	--	CMPBWT_U
CMPBWTcharge	Hospital	Weight to complicated births in universe for estimates of total charges. In 2000 only, this weight is used to create national estimates for analyses that involve total charges.	--	Yes	--	CMPBWTcharge
DCCHPR1	Core	CCS category for principal diagnosis for 1997 KID. CCS was formerly called the Clinical Classifications for Health Policy Research (CCHPR).	Yes	--	--	DCCHPR1
DIED	Core	Indicates in-hospital death: (0) did not die during hospitalization, (1) died during hospitalization	Yes	Yes	Yes	DIED
DISCWT	Core, Hospital	Discharge weight on Core file and Hospital Weights file for KID beginning in 2000. In all data years except 2000, this weight is used to create national estimates for all analyses. In 2000 only, this weight is used to create national estimates for all analyses excluding those that involve total charges.	--	Yes	Yes	DISCWT
DISCWT_U	Core, Hospital	Discharge weight on Core file and Hospital Weights file for 1997 KID.	Yes	--	--	DISCWT_U
DISCWTcharge	Core, Hospital	Discharge weight for national estimates of total charges. In 2000 only, this weight is used to create national estimates for analyses that involve total charges.	--	Yes	--	DISCWTcharge
DISP	Core	Disposition of patient, uniform coding for 1997 KID: (1) routine, (2) short-term hospital, (3) skilled nursing facility, (4) intermediate care facility, (5) another type of facility, (6) home health care, (7) against medical advice, (20) died	Yes	--	--	DISP

DISPUB92	Core	Disposition of patient, UB-92 coding: (1) routine, (2) short term hospital, (3) skilled nursing facility, (4) intermediate care, (5) another type of facility, (6) home health care, (7) against medical advice, (8) home IV provider, (9) admitted as an inpatient to this hospital beginning in 2001 on outpatient data only (20), died in hospital, (40) died at home, (41) died in a medical facility, (42) died, place unknown, (50) Hospice, home, (51) Hospice, medical facility, (61) hospital-based Medicare approved swing bed, (62) another rehabilitation facility, (63) long term care hospital, (64) certified nursing facility, (71) another institution for outpatient services, (72) this institution for outpatient services, (99) discharged alive, destination unknown	--	Yes	Yes	DISPUB92
DISPUNIFORM	Core	Disposition of patient, uniform coding used in 2000 and 2003 KID: (1) routine, (2) transfer to short term hospital, (5) other transfers, including skilled nursing facility, intermediate care, and another type of facility, (6) home health care, (7) against medical advice, (20) died in hospital, (99) discharged alive, destination unknown	--	Yes	Yes	DISPUNIFORM
DQTR	Core	Coded: (1) Jan - Mar, (2) Apr - Jun, (3) Jul - Sep, (4) Oct - Dec	Yes	Yes	Yes	DQTR
DRG	Core	DRG in use on discharge date	Yes	Yes	Yes	DRG
DRG10	Core	DRG Version 10 (effective October 1992 - September 1993)	Yes	--	--	DRG10
DRG18	Core	DRG Version 18 (effective October 2000 - September 2001)	--	Yes	Yes	DRG18
DRGVER	Core	Grouper version in use on discharge date	--	Yes	Yes	DRGVER
DS_DX_Category1	Severity	Disease Staging: Principal Disease Category	--	--	Yes	DS_DX_Category1
DS_LOS_Level	Severity	Disease Staging: Length of Stay Level	--	--	Yes	DS_LOS_Level
DS_LOS_Scale	Severity	Disease Staging: Length of Stay Scale	--	--	Yes	DS_LOS_Scale
DS_Mrt_Level	Severity	Disease Staging: Mortality Level	--	--	Yes	DS_Mrt_Level
DS_Mrt_Scale	Severity	Disease Staging: Mortality Scale	--	--	Yes	DS_Mrt_Scale
DS_RD_Level	Severity	Disease Staging: Resource Demand Level	--	--	Yes	DS_RD_Level
DS_RD_Scale	Severity	Disease Staging: Resource Demand Scale	--	--	Yes	DS_RD_Scale

DS_Stage1	Severity	Disease Staging: Stage of Principal Disease Category	--	--	Yes	DS_Stage1
DSHOSPID	Hospital	Hospital number as received from the data source	--	Yes	Yes	DSHOSPID
DX1-DX15	Core	Diagnoses, principal and secondary (ICD-9-CM)	Yes	Yes	Yes	DX1-DX15
DXCCS1-DXCCS15	Core	CCS category for all diagnoses for KID beginning in 2000	--	Yes	Yes	DXCCS1-DXCCS15
DXV1-DXV15	Core	Diagnosis validity flags	Yes	--	--	DXV1-DXV15
E_CCS1-E_CCS4	Core	CCS category for all E codes for KID beginning in 2003	--	--	Yes	E_CCS1-E_CCS4
ECODE1-ECODE4	Core	External causes of injury codes (ICD-9-CM) for KID beginning in 2003	--	--	Yes	ECODE1-ECODE4
ELECTIVE	Core	Indicates elective admission: (1) elective, (0) non-elective admission	--	--	Yes	ELECTIVE
FEMALE	Core	Indicates gender in 2000 and 2003 KID: (0) male, (1) female	--	Yes	Yes	FEMALE
H_BEDSZ	Hospital	Bed size of hospital: (1) small, (2) medium, (3) large	Yes	--	--	H_BEDSZ
H_BRTH_F	Hospital	Number of frame HCUP births in KID_STRATUM	Yes	Yes	--	H_BRTH_F
H_CHLD_F	Hospital	Number of frame HCUP pediatric non-births in KID_STRATUM	Yes	Yes	--	H_CHLD_F
H_CMPB_F	Hospital	Number of frame HCUP complicated births in KID_STRATUM	Yes	Yes	--	H_CMPB_F
H_CONTRL	Hospital	Control/ownership of hospital: (1) government, nonfederal (2) private, non-profit (3) private, invest-own	Yes	--	--	H_CONTRL
H_DISC_F	Hospital	Number of frame HCUP discharges in KID_STRATUM	Yes	Yes	--	H_DISC_F
H_HOSP_F	Hospital	Number of frame HCUP hospitals in KID_STRATUM	Yes	Yes	--	H_HOSP_F
H_LOC	Hospital	Location: (0) rural, (1) urban	Yes	--	--	H_LOC
H_LOCTCH	Hospital	Location/teaching status of hospital: (1) rural, (2) urban non-teaching, (3) urban teaching	Yes	--	--	H_LOCTCH
H_REGION	Hospital	Region of hospital: (1) Northeast, (2) Midwest, (3) South, (4) West	Yes	--	--	H_REGION
H_TCH	Hospital	Teaching status of hospital: (0) non-teaching, (1) teaching	Yes	--	--	H_TCH
H_UNCB_F	Hospital	Number of frame HCUP uncomplicated births in KID_STRATUM	Yes	Yes	--	H_UNCB_F
HOSP_BEDSIZE	Hospital	Bed size of hospital: (1) small, (2) medium, (3) large	--	Yes	Yes	HOSP_BEDSIZE
HOSP_CONTROL	Hospital	Control/ownership of hospital: (0) government or private, collapsed category, (1) government, nonfederal, public,(2) private, non-profit, voluntary, (3) private, invest-own, (4) private, collapsed category	--	Yes	Yes	HOSP_CONTROL
HOSP_LOCATION	Hospital	Location: (0) rural, (1) urban	--	Yes	Yes	HOSP_LOCATION
HOSP_LOCTEACH	Hospital	Location/teaching status of hospital: (1) rural, (2) urban non-teaching, (3) urban teaching	--	Yes	Yes	HOSP_LOCTEACH

HOSP_REGION	Hospital	Region of hospital: (1) Northeast, (2) Midwest, (3) South, (4) West	--	Yes	Yes	HOSP_REGION
HOSP_TEACH	Hospital	Teaching status of hospital: (0) non-teaching, (1) teaching	--	Yes	Yes	HOSP_TEACH
HOSPADDR	Hospital	Hospital address from AHA Annual Survey of Hospitals	--	Yes	Yes	HOSPADDR
HOSPBRTH	Core	In-hospital births (HOSPBRTH = 1) are identified by any principal or secondary diagnosis code in the range of V3000 to V3901 with the last two digits of "00" or "01" and the patient is not transferred from another acute care hospital or health care facility	Yes	Yes	Yes	HOSPBRTH
HOSPCITY	Hospital	Hospital city from AHA Annual Survey of Hospitals	--	Yes	Yes	HOSPCITY
HOSPID	Core, Hospital, Severity	HCUP hospital number	--	Yes	Yes	HOSPID
HOSPNAME	Hospital	Hospital name from AHA Annual Survey of Hospitals	--	Yes	Yes	HOSPNAME
HOSPNUM	Core, Hospital	HCUP hospital number	Yes	--	--	HOPSNUM
HOSPST	Core, Hospital	State postal code for the hospital (e.g., AZ for Arizona)	--	Yes	Yes	HOSPST
HOSPSTCO	Core (2000), Hospital (2003)	Modified Federal Information Processing Standards (FIPS) State/county code for the hospital links to Area Resource File (available from the Bureau of Health Professions, Health Resources and Services Administration)	--	Yes	Yes	HOSPSTCO
HOSPZIP	Hospital	Hospital ZIP Code from AHA Annual Survey of Hospitals	--	Yes	Yes	HOSPZIP
IDNUMBER	Hospital	AHA hospital identifier without the leading 6 (not available for all states)	--	Yes	Yes	IDNUMBER
KEY	Core, Severity	Unique record number for 2000 KID	--	Yes	--	KEY
KID_STRATUM	Core, Hospital	Stratum used to weight hospitals, based on geographic region, control, location/teaching status, and bed size. Stratum information is also in the Hospital Weights file.	--	Yes	Yes	KID_STRATUM
LOS	Core	Length of stay, edited	Yes	Yes	Yes	LOS
LOS_X	Core	Length of stay, as received from data source	Yes	Yes	Yes	LOS_X

MDC	Core	MDC in use on discharge date	Yes	Yes	Yes	MDC
MDC18	Core	MDC Version 18 (effective October 2000 - September 2001)	--	Yes	Yes	MDC18
MDID_S	Core	Synthetic attending physician number in 1997 and 2000 KID	Yes	Yes	--	MDID_S
MDNUM1_R	Core	Re-identified primary physician number in files beginning in 2003	--	--	Yes	MDNUM1_R
MDNUM2_R	Core	Re-identified secondary physician number in files beginning in 2003	--	--	Yes	MDNUM2_R
N_BRTH_U	Hospital	Number of universe births in KID_STRATUM	Yes	Yes	Yes	N_BRTH_U
N_DISC_U	Hospital	Number of AHA universe discharges in the KID stratum	Yes	Yes	Yes	N_DISC_U
N_HOSP_U	Hospital	Number of AHA universe hospitals in the KID stratum	Yes	Yes	Yes	N_HOSP_U
NACHTYPE	Hospital	NACHRI hospital type	Yes	Yes	Yes	NACHTYPE
NDX	Core	Number of diagnoses coded on the original record	Yes	Yes	Yes	NDX
NECODE	Core	Number of E codes coded on the original record beginning in 2003	--	--	Yes	NECODE
NEOMAT	Core	Assigned from diagnoses and procedure codes: (0) not maternal or neonatal, (1) maternal diagnosis or procedure, (2) neonatal diagnosis, (3) maternal and neonatal on same record	Yes	Yes	Yes	NEOMAT
NPR	Core	Number of procedures coded on the original record	Yes	Yes	Yes	NPR
PAY1	Core	Expected primary payer, uniform: (1) Medicare, (2) Medicaid, (3) private including HMO, (4) self-pay, (5) no charge, (6) other	Yes	Yes	Yes	PAY1
PAY1_N	Core	Expected primary payer, nonuniform: (1) Medicare, (2) Medicaid, (3) Blue Cross, Blue Cross PPO, (4) commercial, PPO, (5) HMO, PHP, etc., (6) self-pay, (7) no charge, (8) Title V, (9) Worker's Compensation, (10) CHAMPUS, CHAMPVA, (11) other government, (12) other	Yes	--	--	PAY1_N
PAY1_X	Core	Expected primary payer, as received from the data source	--	Yes	Yes	PAY1_X
PAY2	Core	Expected secondary payer, uniform: (1) Medicare, (2) Medicaid, (3) private including HMO, (4) self-pay, (5) no charge, (6) other	Yes	Yes	Yes	PAY2

PAY2_N	Core	Expected secondary payer, nonuniform: (1) Medicare, (2) Medicaid, (3) Blue Cross, Blue Cross PPO, (4) commercial, PPO, (5) HMO, PHP, etc., (6) self-pay, (7) no charge, (8) Title V, (9) Worker's Compensation, (10) CHAMPUS, CHAMPVA, (11) other government, (12) other	Yes	--	--	PAY2_N
PAY2_X	Core	Expected secondary payer, as received from the data source	--	Yes	Yes	PAY2_X
PCCHPR1	Core	CCS category for principal procedure for 1997 KID. CCS was formerly called the Clinical Classifications for Health Policy Research (CCHPR).	Yes	--	--	PCCHPR1
PEDS_DISC	Hospital	Number of discharges, 20 years old or younger, from this hospital in the SID	--	Yes	Yes	PEDS_DISC
PEDS_PCT	Hospital	Percentage of hospital discharges, 20 years old or younger	--	Yes	Yes	PEDS_PCT
PL_UR_CAT4	Core	Patient location: Urban-Rural 4 categories for KID beginning in 2003	--	--	Yes	PL_UR_CAT4
PR1-PR15	Core	Procedures, principal and secondary (ICD-9-CM)	Yes	Yes	Yes	PR1-PR15
PRCCS1-PRCCS15	Core	CCS category for all procedures for 2000 and 2003 KID	--	Yes	Yes	PRCCS1-PRCCS15
PRDAY1	Core	Number of days from admission to principal procedure. In the 1997 KID, only the day of principal procedure (PRDAY1) is available.	Yes	Yes	Yes	PRDAY1
PRDAY2-PRDAY15	Core	Number of days from admission to secondary procedures. In the 1997 KID, only the day of principal procedure (PRDAY1) is available.	--	Yes	Yes	PRDAY2-PRDAY15
PRV1-PRV15	Core	Procedure validity flag	Yes	--	--	PRV1-PRV15
RACE	Core	Race, uniform coding: (1) white, (2) black, (3) Hispanic, (4) Asian or Pacific Islander, (5) Native American, (6) other	Yes	Yes	Yes	RACE
RECNUM	Core, Severity	HCUP unique record number	Yes	--	Yes	RECNUM
S_BRTH_U	Hospital	Number of sample births in KID_STRATUM	Yes	Yes	Yes	S_BRTH_U
S_CHLD	Hospital	Pediatric non-births sampled	Yes	Yes	--	S_CHLD
S_CHLD_U	Hospital	Number of sample pediatric non-births in KID_STRATUM	Yes	Yes	Yes	S_CHLD_U
S_CMPB	Hospital	Complicated births sampled	Yes	Yes	--	S_CMPB
S_CMPB_U	Hospital	Number of sample complicated births in KID_STRATUM	Yes	Yes	Yes	S_CMPB_U
S_DISC_U	Hospital	Number of sample births and children in KID_STRATUM	Yes	Yes	Yes	S_DISC_U

S_HOSP_U	Hospital	Number of sample hospitals in KID_STRATUM	Yes	Yes	Yes	S_HOSP_U
S_UNCB	Hospital	Uncomplicated births sampled	Yes	Yes	--	S_UNCB
S_UNCB_U	Hospital	Number of sample uncomplicated births in KID_STRATUM	Yes	Yes	Yes	S_UNCB_U
SEX	Core	Indicates gender for 1997 KID: (1) male, (2) female	Yes	--	--	SEX
STRATUM	Hospital	Stratum used in 1997 KID; includes geographic region, control, location/teaching status, and bed size	Yes	--	--	STRATUM
SURGID_S	Core	Synthetic secondary physician number in files prior to 2001	Yes	Yes	--	SURGID_S
TOTAL_DISC	Hospital	Total number of discharges from this hospital in the KID	--	Yes	Yes	TOTAL_DISC
TOTCHG	Core	Total charges, edited	Yes	Yes	Yes	TOTCHG
TOTCHG_X	Core	Total charges, as received from data source	Yes	Yes	Yes	TOTCHG_X
TOTDSCHG	Hospital	Total number of discharges from this hospital in the KID	Yes	--	--	TOTDSCHG
UNCBRTH	Core	Uncomplicated births (UNCBRTH = 1) have a Diagnosis Related Group (DRG) equal to 391 indicating "Normal Newborn."	Yes	Yes	Yes	UNCBRTH
UNCBWT	Hospital	Weight to uncomplicated births in universe	--	Yes	--	UNCBWT
UNCBWT_U	Hospital	Weight to uncomplicated births in universe for 1997 KID	Yes	--	--	UNCBWT_U
UNCBWTcharge	Hospital	Weight to uncomplicated births in universe for estimates of total charges. In 2000 only, this weight is used to create national estimates for analyses that involve total charges.	--	Yes	--	UNCBWTcharge
YEAR	Core, Hospital	Discharge year	Yes	Yes	Yes	YEAR
ZIPINC	Core	Median household income category in 2000 KID files: (1) $1-$24,999, (2) $25,000-$34,999, (3) $35,000-$44,999, (4) $45,000 and above.	--	Yes	--	ZIPINC
ZIPINC_Qrtl	Core	Median household income quartiles for patient's ZIP Code for KID beginning in 2003	--	--	Yes	ZIPINC_Qrtl
ZIPINC4	Core	Median household income category in 1997 KID: (1) $1-$25,000, (2) $25,001-$30,000, (3) $30,001-$35,000, (4) $35,001 and above	Yes	--	--	ZIPINC4