

## INSTRUCTIONS

### IQI AND PSI RATES GENERATED BY THE AHRQ SAS PROGRAMS

#### Guidance for Using the SAS Programs and an Example of Output for One Hospital

**What is this tool?** To work with the Inpatient Quality Indicators (IQIs) and Patient Safety Indicators (PSIs) for assessing its own performance, a hospital needs to calculate rates for these Indicators, using the SAS programs provided by the Agency for Healthcare Research and Quality (AHRQ). This tool provides three sets of information to help you work with the SAS programs to calculate rates for your hospital and use the output from those programs:

- An outline of the steps and programs used to calculate rates for the IQIs and PSIs.
- Notes for analysts and programmers on issues to manage in working with the SAS programs.
- An example of the output from the SAS programs for one hospital.

**Who are the target audiences?** The primary audience for this tool is the programmers or analysts who will perform the calculations of rates for the IQIs and PSIs.

**How can the tool help you?** The examples and guidance provided by this tool should help you work more easily with the SAS programs used to calculate the IQIs and PSIs for your hospital, and to read and use the output from the programs.

**How does this tool relate to others?** This tool should be used together with the B.1 tool on *Applying the Quality Indicators to Hospital Data*, which explains the different types of rates calculated for the IQIs and PSIs..

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## Indicator Data Generated by the SAS Programs

The following steps are taken to produce the rates for both the IQIs and PSIs:

1. Identify outcomes in inpatient records.
2. Identify populations at risk.
3. Calculate observed (raw) indicator rates.
4. Risk adjust the indicator rates (where applicable).
5. Create smoothed rates using multivariate signal extraction (where applicable).

The SAS programs provided by AHRQ for calculation of the IQIs and PSIs, as well as documentation on how to use the programs, can be found in a zip file on the AHRQ Web site:

[www.qualityindicators.ahrq.gov/software/SAS.aspx](http://www.qualityindicators.ahrq.gov/software/SAS.aspx).

The documentation is provided in separate software documentation guides for the IQIs and PSIs. Each guide includes instructions for variable definitions and for calculating observed, expected, risk-adjusted, and smoothed rates for the indicators.

Rates for the IQIs and PSIs are calculated using the same six programming steps, each of which uses a separate SAS program. The names and descriptions of the SAS programs involved are summarized in the following table.

<b>IQI Programs</b>	<b>PSI Programs</b>	<b>Program Description</b>
CONTROL_IQI.SAS	CONTROL_PSI.SAS	Contains SAS statements that run the remaining programs
IQFMTS	PSFMTS	Defines a format library that contains the diagnosis and procedure screens necessary for assigning outcomes for each Indicator
IQSAS1	PSSAS1	Processes hospital discharge abstract data and flags records if they contain the outcomes of interest for each Indicator
IQSASP2	PSSASP2	Calculates the observed (raw) rates for the Indicators
IQSASP3	PSSASP3	Calculates expected rates, risk-adjusted rates, and smoothed rates for each Indicator
IQI_COMPOSITE.SAS	PSI_COMPOSITE.SAS	Calculates the composite rate for the set of indicators (PSIs or mortality IQIs)

### Notes for Analysts and Programmers

The documentation provides guidance on how to set up the files and run the programs. However, as is usually the case when applying new programs to a data file, several issues have been identified that you will need to manage as you work with the AHRQ SAS programs. The identified issues are discussed here to help ease your first application of the programs to your data. Once you have run the programs successfully, any use of them on subsequent data should proceed smoothly.

One issue that affects the ability to begin to use the programs is the need to obtain a file that is not included in the zip files with the other AHRQ QI SAS programs. This is the population file, POPFILE, which you must locate separately on the AHRQ Web site:

[www.qualityindicators.ahrq.gov/software/SAS.aspx](http://www.qualityindicators.ahrq.gov/software/SAS.aspx).

### Getting Your Data Ready

When preparing data for the SAS PSI and IQI software programs, you should be aware that a few steps are essential for running the programs without errors.

1. Format and structure your dataset so that it matches the structure specified in the documentation. If you try to run the program without first structuring and formatting the data to the exact

specifications listed, the program will not run properly. All numeric variables must be specified as numeric, and all character variables must be specified as character.

2. In some cases, you may not have a variable in your dataset that is required by the program. If it is not essential for calculating the rates, you may create an empty variable so that the program will run (e.g., AGEDAY, DQTR, and PAY2 may be created and set to missing).
3. The KEY variable is the unique case identifier. It is important that this variable be a unique numeric identifier for each record. You may create this variable in SAS using the built-in case counter (KEY = \_n\_;
4. For the IQI programs, to obtain risk-adjusted rates, you must run APR-DRG software first and indicate this with the flag variables APR\_DRG, APRDRG\_RISK\_MORTALITY, and XPRDRG\_RISK\_MORTALITY. If you are not interested in obtaining risk-adjusted rates, you may adjust these variables so that the program will still run without errors. Specific directions are listed in the documentation (Section 5.3).

## Modifying the AHRQ SAS Programs

The control files used to specify the programs' parameters are CONTROL\_PSI.SAS and CONTROL\_IQI.SAS. Each command in this file is preceded by a comment and brief instructions. For some of the commands, the control file states that the user "MUST modify" the code. In other cases, the control file states that the user "MAY modify" the code. However, depending on the structure of your data, sometimes you *must* address these seemingly optional modifications. This is not clearly explained in the code.

For example, the number of diagnosis codes (Dx) or procedures *must* be changed if it does not match your data exactly. If you have 20 diagnosis code variables, the default number of diagnosis codes (30) must be changed or the program will not run properly.

Errors may not appear until you run the PSSAS1.SAS or IQSAS1.SAS files. When troubleshooting, check the structure of the data and the control file first.

## Example of SAS Program Output

An example of the output from the SAS programs for the PSI rates is provided on the following pages. This output was generated from a run of the programs on the data for one large hospital, which had a large set of discharge records that would have the best chance of finding events for the numerators in the observed rates. Even in this case, however, you will see that zero events were found for some of the Indicators.

**NOTE: Refer to tool B.1, Applying the Qis, for definitions of the four types of rates.**

This output consists of three tables, each of which was generated by one of the following SAS programs: PSSASP2, PSSASP3, and PSI\_COMPOSITE.SAS. In each table, the first line of output for each set of measures involved is highlighted in light gray, to assist you in navigating the table. For example, the line in the first table for TPPS02 DEATH IN LOW MORTALITY DRGS (numerator) is highlighted; this line is followed by additional numerator data for all the other PSIs. Then the line for the population (denominator) for this indicator is highlighted, again followed by data for the remaining PSIs.

The output from PSSASP3, which calculates the expected, risk-adjusted, and smoothed rates, first lists the numerators, denominators, and observed rates for the Indicators. This replicates the output from PSSASP2. Then the other rates are presented in a group for each indicator in turn.

The values reported on each line are the minimum, maximum, mean, and sum for each measure (numerator, population, rate). Because this output is for one hospital, all the values on each line are the same. If the programs had been run for a group of hospitals, these values would differ because the results would be for a distribution of results across hospitals.

In the example below, Num (numerator) refers to the number of events. Pop (population) refers to the number of individuals in the population at risk for the event. Obs (observed) refers to the observed rate.

PSSASP2.SAS

**AHRQ PATIENT SAFETY INDICATORS: CALCULATE OBSERVED PROVIDER RATES  
SUMMARY OF PROVIDER-LEVEL RATES (\_TYPE\_=16)**

Variable	Label	N	N Miss	Minimum	Maximum	Mean	Sum
hospid		1	0	190125	190125	190125	190125
AGECAT	PATIENT AGE	0	1 .	.	.	.	.
SEXCAT	PATIENT GENDER	0	1 .	.	.	.	.
PAYCAT	PATIENT PRIMARY PAYER	0	1 .	.	.	.	.
RACECAT	PATIENT RACE/ETHNICITY	0	1 .	.	.	.	.
_TYPE_	STRATIFICATION LEVEL	1	0	16	16	16	16
TPPS02	DEATH IN LOW MORTALITY DRGS (Numerator)	1	0	0	0	0	0
TPPS03	PRESSURE ULCER (Numerator)	1	0	53	53	53	53
TPPS04	DEATH AMONG SURGICAL (Numerator)	1	0	0	0	0	0
TPPS05	FOREIGN BODY LEFT IN DURING PROC (Num)	1	0	1	1	1	1
TPPS06	IATROGENIC PNEUMOTHORAX (Numerator)	1	0	1	1	1	1
TPPS07	CENTRAL LINE ASSOCIATED BSI (Num)	1	0	13	13	13	13
TPPS08	POSTOPERATIVE HIP FRACTURE (Numerator)	1	0	0	0	0	0
TPPS09	POSTOP HEMORRHAGE OR HEMATOMA (Num)	1	0	1	1	1	1
TPPS10	POSTOP PHYSIO METABOL DERANGEMENT (Num)	0	1 .	.	.	.	.
TPPS11	POSTOP RESPIRATORY FAILURE (Numerator)	0	1 .	.	.	.	.
TPPS12	POSTOPERATIVE PE OR DVT (Numerator)	1	0	14	14	14	14
TPPS13	POSTOPERATIVE SEPSIS (Numerator)	0	1 .	.	.	.	.
TPPS14	POSTOPERATIVE WOUND DEHISCENCE (Num)	1	0	0	0	0	0
TPPS15	ACCIDENTAL PUNCTURE/LACERATION(Num)	1	0	5	5	5	5
TPPS16	TRANSFUSION REACTION (Numerator)	0	1 .	.	.	.	.
TPPS18	OB TRAUMA - VAGINAL W INSTRUMENT (Num)	1	0	11	11	11	11
TPPS19	OB TRAUMA - VAGINAL W/O INSTRUMENT (Num)	1	0	36	36	36	36

Variable	Label	N	N Miss	Minimum	Maximum	Mean	Sum
PPPS02	DEATH IN LOW MORTALITY DRGS (Pop)	1	0	3460	3460	3460	3460
PPPS03	PRESSURE ULCER (Pop)	1	0	1016	1016	1016	1016
PPPS04	DEATH AMONG SURGICAL (Pop)	1	0	39	39	39	39
PPPS05	FOREIGN BODY LEFT IN DURING PROC (Pop)	1	0	1	1	1	1
PPPS06	IATROGENIC PNEUMOTHORAX (Pop)	1	0	3865	3865	3865	3865
PPPS07	CENTRAL LINE ASSOCIATED BSI (Pop)	1	0	5220	5220	5220	5220
PPPS08	POSTOPERATIVE HIP FRACTURE (Pop)	1	0	444	444	444	444
PPPS09	POSTOP HEMORRHAGE OR HEMATOMA (Pop)	1	0	812	812	812	812
PPPS10	POSTOP PHYSIO METABOL DERANGEMENT (Pop)	0	1	.	.	.	.
PPPS11	POSTOP RESPIRATORY FAILURE (Pop)	0	1	.	.	.	.
PPPS12	POSTOP PE OR DVT-NO PRDAY (Pop)	1	0	817	817	817	817
PPPS13	POSTOPERATIVE SEPSIS (Pop)	0	1	.	.	.	.
PPPS14	POSTOPERATIVE WOUND DEHISCENCE (Pop)	1	0	200	200	200	200
PPPS15	ACCIDENTAL PUNCTURE/LACERATION (Pop)	1	0	4020	4020	4020	4020
PPPS16	TRANSFUSION REACTION (Pop)	0	1	.	.	.	.
PPPS18	OB TRAUMA - VAGINAL W INSTRUMENT (Pop)	1	0	79	79	79	79
PPPS19	OB TRAUMA - VAGINAL W/O INSTRUMENT (Pop)	1	0	1814	1814	1814	1814
OPPS02	DEATH IN LOW MORTALITY DRGS (Observed)	1	0	0	0	0	0
OPPS03	PRESSURE ULCER (Observed)	1	0	0.0521654	0.0521654	0.0521654	0.0521654
OPPS04	DEATH AMONG SURGICAL (Observed)	1	0	0	0	0	0
OPPS05	FOREIGN BODY LEFT IN DURING PROC (Obs)	1	0	1	1	1	1
OPPS06	IATROGENIC PNEUMOTHORAX (Observed)	1	0	0.00025873	0.00025873	0.0002587	0.0002587
OPPS07	CENTRAL LINE ASSOCIATED BSI (Observed)	1	0	0.0024904	0.0024904	0.0024904	0.0024904
OPPS08	POSTOPERATIVE HIP FRACTURE (Observed)	1	0	0	0	0	0
OPPS09	POSTOP HEMORRHAGE OR HEMATOMA (Observed)	1	0	0.0012315	0.0012315	0.0012315	0.0012315
OPPS10	POSTOP PHYSIO METABOL DERANGEMENT (Obs)	0	1	.	.	.	.

Variable	Label	N	N Miss	Minimum	Maximum	Mean	Sum
OPPS11	POSTOP RESPIRATORY FAILURE (Observed)	0	1	.	.	.	.
OPPS12	POSTOPERATIVE PE OR DVT (Observed)	1	0	0.0171359	0.0171359	0.0171359	0.0171359
OPPS13	POSTOPERATIVE SEPSIS (Observed)	0	1	.	.	.	.
OPPS14	POSTOPERATIVE WOUND DEHISCENCE (Obs)	1	0	0	0	0	0
OPPS15	ACCIDENTAL PUNCTURE/LACERATION(Observed)	1	0	0.0012438	0.0012438	0.0012438	0.0012438
OPPS16	TRANSFUSION REACTION (Observed)	0	1	.	.	.	.
OPPS18	OB TRAUMA - VAGINAL W INSTRUMENT (Obs)	1	0	0.1392405	0.1392405	0.1392405	0.1392405
OPPS19	OB TRAUMA - VAGINAL WO INSTRUMENT (Obs)	1	0	0.0198456	0.0198456	0.0198456	0.0198456

PSSASP3.SAS

**PROGRAM P3 PART II**  
**AHRQ PATIENT SAFETY INDICATORS: PROVIDER-LEVEL MERGED FILES**  
**SUMMARY OF PROVIDER-LEVEL RATES (\_TYPE\_=16)**

Variable	Label	N	N Miss	Minimum	Maximum	Mean	Sum
hospid		1	0	190125	190125	190125	190125
AGECAT	PATIENT AGE	0	1	.	.	.	.
SEXCAT	PATIENT GENDER	0	1	.	.	.	.
PAYCAT	PATIENT PRIMARY PAYER	0	1	.	.	.	.
RACECAT	PATIENT RACE/ETHNICITY	0	1	.	.	.	.
_TYPE_	STRATIFICATION LEVEL	1	0	16	16	16	16
TPPS02	DEATH IN LOW MORTALITY DRGS (Numerator)	1	0	0	0	0	0
TPPS03	PRESSURE ULCER (Numerator)	1	0	53	53	53	53
TPPS04	DEATH AMONG SURGICAL (Numerator)	1	0	0	0	0	0
TPPS05	FOREIGN BODY LEFT IN DURING PROC (Num)	1	0	1	1	1	1
TPPS06	IATROGENIC PNEUMOTHORAX (Numerator)	1	0	1	1	1	1
TPPS07	CENTRAL LINE ASSOCIATED BSI (Num)	1	0	13	13	13	13
TPPS08	POSTOPERATIVE HIP FRACTURE (Numerator)	1	0	0	0	0	0
TPPS09	POSTOP HEMORRHAGE OR HEMATOMA (Num)	1	0	1	1	1	1
TPPS10	POSTOP PHYSIO METABOL DERANGEMENT (Num)	0	1	.	.	.	.
TPPS11	POSTOP RESPIRATORY FAILURE (Numerator)	0	1	.	.	.	.
TPPS12	POSTOPERATIVE PE OR DVT (Numerator)	1	0	14	14	14	14
TPPS13	POSTOPERATIVE SEPSIS (Numerator)	0	1	.	.	.	.
TPPS14	POSTOPERATIVE WOUND DEHISCENCE (Num)	1	0	0	0	0	0
TPPS15	ACCIDENTAL PUNCTURE/LACERATION(Num)	1	0	5	5	5	5
TPPS16	TRANSFUSION REACTION (Numerator)	0	1	.	.	.	.
TPPS18	OB TRAUMA - VAGINAL W INSTRUMENT (Num)	1	0	11	11	11	11
TPPS19	OB TRAUMA - VAGINAL W/O INSTRUMENT (Num)	1	0	36	36	36	36

Variable	Label	N	N Miss	Minimum	Maximum	Mean	Sum
PPPS02	DEATH IN LOW MORTALITY DRGS (Pop)	1	0	3460	3460	3460	3460
PPPS03	PRESSURE ULCER (Pop)	1	0	1016	1016	1016	1016
PPPS04	DEATH AMONG SURGICAL (Pop)	1	0	39	39	39	39
PPPS05	FOREIGN BODY LEFT IN DURING PROC (Pop)	1	0	1	1	1	1
PPPS06	IATROGENIC PNEUMOTHORAX (Pop)	1	0	3865	3865	3865	3865
PPPS07	CENTRAL LINE ASSOCIATED BSI (Pop)	1	0	5220	5220	5220	5220
PPPS08	POSTOPERATIVE HIP FRACTURE (Pop)	1	0	444	444	444	444
PPPS09	POSTOP HEMORRHAGE OR HEMATOMA (Pop)	1	0	812	812	812	812
PPPS10	POSTOP PHYSIO METABOL DERANGEMENT (Pop)	0	1	.	.	.	.
PPPS11	POSTOP RESPIRATORY FAILURE (Pop)	0	1	.	.	.	.
PPPS12	POSTOP PE OR DVT-NO PRDAY (Pop)	1	0	817	817	817	817
PPPS13	POSTOPERATIVE SEPSIS (Pop)	0	1	.	.	.	.
PPPS14	POSTOPERATIVE WOUND DEHISCENCE (Pop)	1	0	200	200	200	200
PPPS15	ACCIDENTAL PUNCTURE/LACERATION (Pop)	1	0	4020	4020	4020	4020
PPPS16	TRANSFUSION REACTION (Pop)	0	1	.	.	.	.
PPPS18	OB TRAUMA - VAGINAL W INSTRUMENT (Pop)	1	0	79	79	79	79
PPPS19	OB TRAUMA - VAGINAL W/O INSTRUMENT (Pop)	1	0	1814	1814	1814	1814
OPPS02	DEATH IN LOW MORTALITY DRGS (Observed)	1	0	0	0	0	0
OPPS03	PRESSURE ULCER (Observed)	1	0	0.052165	0.0521654	0.052165	0.052165
OPPS04	DEATH AMONG SURGICAL (Observed)	1	0	0	0	0	0
OPPS05	FOREIGN BODY LEFT IN DURING PROC (Obs)	1	0	1	1	1	1
OPPS06	IATROGENIC PNEUMOTHORAX (Observed)	1	0	0.000259	0.00025873	0.000259	0.000259
OPPS07	CENTRAL LINE ASSOCIATED BSI (Observed)	1	0	0.00249	0.0024904	0.00249	0.00249
OPPS08	POSTOPERATIVE HIP FRACTURE (Observed)	1	0	0	0	0	0
OPPS09	POSTOP HEMORRHAGE OR HEMATOMA (Observed)	1	0	0.001232	0.0012315	0.001232	0.001232
OPPS10	POSTOP PHYSIO METABOL DERANGEMENT (Obs)	0	1	.	.	.	.
OPPS11	POSTOP RESPIRATORY FAILURE (Observed)	0	1	.	.	.	.

Variable	Label	N	N Miss	Minimum	Maximum	Mean	Sum
OPPS12	POSTOPERATIVE PE OR DVT (Observed)	1	0	0.017136	0.0171359	0.017136	0.017136
OPPS13	POSTOPERATIVE SEPSIS (Observed)	0	1	.	.	.	.
OPPS14	POSTOPERATIVE WOUND DEHISCENCE (Obs)	1	0	0	0	0	0
OPPS15	ACCIDENTAL PUNCTURE/LACERATION(Observed)	1	0	0.001244	0.0012438	0.001244	0.001244
OPPS16	TRANSFUSION REACTION (Observed)	0	1	.	.	.	.
OPPS18	OB TRAUMA - VAGINAL W INSTRUMENT (Obs)	1	0	0.139241	0.1392405	0.139241	0.139241
OPPS19	OB TRAUMA - VAGINAL WO INSTRUMENT (Obs)	1	0	0.019846	0.0198456	0.019846	0.019846
EPPS02	DEATH IN LOW MORT DRGS (Expected)	1	0	0.0002	0.00019992	0.0002	0.0002
RPPS02	DEATH IN LOW MORT DRGS (Risk Adj)	1	0	0	0	0	0
VPPS02		1	0	1.34E-07	1.34E-07	1.34E-07	1.34E-07
SPPS02	DEATH IN LOW MORT DRGS (Smoothed)	1	0	0.000295	0.00029464	0.000295	0.000295
XPPS02	DEATH IN LOW MORT DRGS (Smthe SE)	1	0	6.54E-05	6.5425E-05	6.54E-05	6.54E-05
LPPS02	DEATH IN LOW MORT DRGS (Lower CL)	1	0	0	0	0	0
UPPS02	DEATH IN LOW MORT DRGS (Upper CL)	1	0	0.000717	0.00071671	0.000717	0.000717
EPPS03	PRESSURE ULCER-NO PRDAY (Expected)	1	0	0.02251	0.0225095	0.02251	0.02251
RPPS03	PRESSURE ULCER-NO PRDAY (Risk Adj)	1	0	0.042752	0.0427515	0.042752	0.042752
VPPS03		1	0	1.45E-05	1.4494E-05	1.45E-05	1.45E-05
SPPS03	PRESSURE ULCER-NO PRDAY (Smoothed)	1	0	0.040235	0.0402349	0.040235	0.040235
XPPS03	PRESSURE ULCER (Smthe SE)	1	0	0.003605	0.0036046	0.003605	0.003605
LPPS03	PRESSURE ULCER (Lower CL)	1	0	0.03529	0.0352897	0.03529	0.03529
UPPS03	PRESSURE ULCER (Upper CL)	1	0	0.050213	0.0502133	0.050213	0.050213
EPPS04	DEATH AMONG SURGICAL (Expected)	1	0	0.134169	0.1341692	0.134169	0.134169
RPPS04	DEATH AMONG SURGICAL (Risk Adj)	1	0	0	0	0	0
VPPS04		1	0	0.002347	0.0023471	0.002347	0.002347
SPPS04	DEATH AMONG SURGICAL (Smoothed)	1	0	0.114729	0.1147287	0.114729	0.114729
XPPS04	DEATH AMONG SURGICAL (Smthe SE)	1	0	0.01458	0.0145798	0.01458	0.01458
LPPS04	DEATH AMONG SURGICAL (Lower CL)	1	0	0	0	0	0

Variable	Label	N	N Miss	Minimum	Maximum	Mean	Sum
UPPS04	DEATH AMONG SURGICAL (Upper CL)	1	0	0.094956	0.0949559	0.094956	0.094956
EPPS06	IATROGENIC PNEUMOTHORAX (Expected)	1	0	0.000649	0.00064931	0.000649	0.000649
RPPS06	IATROGENIC PNEUMOTHORAX (Risk Adj)	1	0	0.000187	0.0001875	0.000187	0.000187
VPPS06		1	0	8.81E-08	8.81E-08	8.81E-08	8.81E-08
SPPS06	IATROGENIC PNEUMOTHORAX (Smoothed)	1	0	0.000444	0.00044445	0.000444	0.000444
XPPS06	IATROGENIC PNEUMOTHORAX (Smthe SE)	1	0	9.01E-05	9.0125E-05	9.01E-05	9.01E-05
LPPS06	IATROGENIC PNEUMOTHORAX (Lower CL)	1	0	0	0	0	0
UPPS06	IATROGENIC PNEUMOTHORAX (Upper CL)	1	0	0.000769	0.0007694	0.000769	0.000769
EPPS07	CENTRAL LINE ASSOCIATED BSI (Expected)	1	0	0.001664	0.0016644	0.001664	0.001664
RPPS07	CENTRAL LINE ASSOCIATED BSI (Risk Adj)	1	0	0.002408	0.0024078	0.002408	0.002408
VPPS07		1	0	2.97E-07	2.97E-07	2.97E-07	2.97E-07
SPPS07	CENTRAL LINE ASSOCIATED BSI (Smoothed)	1	0	0.001818	0.001818	0.001818	0.001818
XPPS07	CENTRAL LINE ASSOCIATED BSI (Smthe SE)	1	0	0.000279	0.00027885	0.000279	0.000279
LPPS07	CENTRAL LINE ASSOCIATED BSI (Lower CL)	1	0	0.001339	0.001339	0.001339	0.001339
UPPS07	CENTRAL LINE ASSOCIATED BSI (Upper CL)	1	0	0.003477	0.0034766	0.003477	0.003477
EPPS08	POSTOP HIP FRACTURE-NO PRDAY (Expected)	1	0	0.000159	0.00015872	0.000159	0.000159
RPPS08	POSTOP HIP FRACTURE-NO PRDAY (Risk Adj)	1	0	0	0	0	0
VPPS08		1	0	3.66E-07	3.66E-07	3.66E-07	3.66E-07
SPPS08	POSTOP HIP FRACTURE-NO PRDAY (Smoothed)	1	0	0.000157	0.00015674	0.000157	0.000157
XPPS08	POSTOPERATIVE HIP FRACTURE (Smthe SE)	1	0	9.31E-05	9.3074E-05	9.31E-05	9.31E-05
LPPS08	POSTOPERATIVE HIP FRACTURE (Lower CL)	1	0	0	0	0	0
UPPS08	POSTOPERATIVE HIP FRACTURE (Upper CL)	1	0	0.001185	0.0011854	0.001185	0.001185
EPPS09	POSTOP HEMOR OR HEMAT-NO PRDAY (Exp)	1	0	0.002649	0.002649	0.002649	0.002649
RPPS09	POSTOP HEMOR OR HEMAT-NO PRDAY (RA)	1	0	0.001197	0.0011965	0.001197	0.001197
VPPS09		1	0	3.07E-06	3.07E-06	3.07E-06	3.07E-06
SPPS09	POSTOP HEMOR OR HEMAT-NO PRDAY (Smthd)	1	0	0.002501	0.0025007	0.002501	0.002501
XPPS09	POSTOP HEMORRHAGE OR HEMATOMA (Smthe SE)	1	0	0.000403	0.00040338	0.000403	0.000403

Variable	Label	N	N Miss	Minimum	Maximum	Mean	Sum
LPPS09	POSTOP HEMORRHAGE OR HEMATOMA (LL)	1	0	0	0	0	0
UPPS09	POSTOP HEMORRHAGE OR HEMATOMA (UL)	1	0	0.004631	0.0046311	0.004631	0.004631
EPPS10	POSTOP PHYSIO METABO DE-NO PRDAY (Exp)	0	1	.	.	.	.
RPPS10	POSTOP PHYSIO METABO DE-NO PRDAY (RA)	0	1	.	.	.	.
LPPS10	POSTOP PHYSIO METABOL DERANGMNT (LL)	0	1	.	.	.	.
UPPS10	POSTOP PHYSIO METABOL DERANGMNT (UL)	0	1	.	.	.	.
SPPS10	POSTOP PHYSIO METABO DE-NO PRDAY (Smthd)	0	1	.	.	.	.
XPPS10	POSTOP PHYSIO METABOL DERANGEMENT (SmtSE)	0	1	.	.	.	.
VPPS10		0	1	.	.	.	.
EPPS11	POSTOP RESP FAILURE-NO PRDAY (Expected)	0	1	.	.	.	.
RPPS11	POSTOP RESP FAILURE-NO PRDAY (Risk Adj)	0	1	.	.	.	.
LPPS11	POSTOP RESPIRATORY FAILURE (Lower CL)	0	1	.	.	.	.
UPPS11	POSTOP RESPIRATORY FAILURE (Upper CL)	0	1	.	.	.	.
SPPS11	POSTOP RESP FAILURE-NO PRDAY (Smoothed)	0	1	.	.	.	.
XPPS11	POSTOP RESPIRATORY FAILURE (Smthe SE)	0	1	.	.	.	.
VPPS11		0	1	.	.	.	.
EPPS12	POSTOP PE OR DVT-NO PRDAY (Expected)	1	0	0.010752	0.010752	0.010752	0.010752
RPPS12	POSTOP PE OR DVT-NO PRDAY (Risk Adj)	1	0	0.016219	0.0162191	0.016219	0.016219
VPPS12		1	0	1.16E-05	1.1638E-05	1.16E-05	1.16E-05
SPPS12	POSTOP PE OR DVT-NO PRDAY (Smoothed)	1	0	0.012848	0.0128484	0.012848	0.012848
XPPS12	POSTOPERATIVE PE OR DVT (Smthe SE)	1	0	0.002269	0.0022685	0.002269	0.002269
LPPS12	POSTOPERATIVE PE OR DVT (Lower CL)	1	0	0.009533	0.0095325	0.009533	0.009533
UPPS12	POSTOPERATIVE PE OR DVT (Upper CL)	1	0	0.022906	0.0229056	0.022906	0.022906
EPPS13	POSTOPERATIVE SEPSIS (Expected)	0	1	.	.	.	.
RPPS13	POSTOPERATIVE SEPSIS (Risk Adj)	0	1	.	.	.	.
LPPS13	POSTOPERATIVE SEPSIS (Lower CL)	0	1	.	.	.	.
UPPS13	POSTOPERATIVE SEPSIS (Upper CL)	0	1	.	.	.	.

Variable	Label	N	N Miss	Minimum	Maximum	Mean	Sum
SPPS13	POSTOPERATIVE SEPSIS (Smoothed)	0	1	.	.	.	.
XPPS13	POSTOPERATIVE SEPSIS (Smthe SE)	0	1	.	.	.	.
VPPS13		0	1	.	.	.	.
EPPS14	POSTOP WOUND DEHISCENCE-NO PRDAY (Exp)	1	0	0.001828	0.0018283	0.001828	0.001828
RPPS14	POSTOP WOUND DEHISCENCE-NO PRDAY (RA)	1	0	0	0	0	0
VPPS14		1	0	1.32E-05	1.3203E-05	1.32E-05	1.32E-05
SPPS14	POSTOP WOUND DEHISCENCE-NO PRDAY (Smthd)	1	0	0.002175	0.0021749	0.002175	0.002175
XPPS14	POSTOPERATIVE WOUND DEHISCENCE (SmtSE)	1	0	0.000386	0.00038624	0.000386	0.000386
LPPS14	POSTOPERATIVE WOUND DEHISCENCE (LL)	1	0	0	0	0	0
UPPS14	POSTOPERATIVE WOUND DEHISCENCE (UL)	1	0	0.007122	0.0071219	0.007122	0.007122
EPPS15	ACCIDENTAL PUNCTURE/LACERATION(Expected)	1	0	0.002818	0.0028176	0.002818	0.002818
RPPS15	ACCIDENTAL PUNCTURE/LACERATION (RA)	1	0	0.001349	0.0013491	0.001349	0.001349
VPPS15		1	0	8.21E-07	8.21E-07	8.21E-07	8.21E-07
SPPS15	ACCIDENTAL PUNCTURE/LACERATION(Smoothed)	1	0	0.002423	0.0024233	0.002423	0.002423
XPPS15	ACCIDENTAL PUNCTURE/LACERATION(Smthe SE)	1	0	0.000552	0.00055179	0.000552	0.000552
LPPS15	ACCIDENTAL PUNCTURE/LACERATION (LL)	1	0	0	0	0	0
UPPS15	ACCIDENTAL PUNCTURE/LACERATION (UL)	1	0	0.003125	0.0031252	0.003125	0.003125
EPPS18	OB TRAUMA - VAGINAL W INSTRUMENT (Exp)	1	0	0.14219	0.1421895	0.14219	0.14219
EPPS19	OB TRAUMA - VAGINAL W/O INST (Exp)	1	0	0.024428	0.0244277	0.024428	0.024428
RPPS18	OB TRAUMA - VAGINAL W INSTRUMENT (RA)	1	0	0.139241	0.1392405	0.139241	0.139241
RPPS19	OB TRAUMA - VAGINAL W/O INSTRUMENT (RA)	1	0	0.019846	0.0198456	0.019846	0.019846
SEPS18		1	0	0.03895	0.0389502	0.03895	0.03895
SEPS19		1	0	0.003275	0.0032746	0.003275	0.003275
VPPS18		1	0	0.001517	0.0015171	0.001517	0.001517
VPPS19		1	0	1.07E-05	1.0723E-05	1.07E-05	1.07E-05
SNPS18		1	0	0.998485	0.9984852	0.998485	0.998485
SNPS19		1	0	0.999989	0.9999893	0.999989	0.999989

Variable	Label	N	N Miss	Minimum	Maximum	Mean	Sum
SPPS18	OB TRAUMA - VAGINAL W INSTRUMENT (SmtHd)	1	0	0.139245	0.139245	0.139245	0.139245
SPPS19	OB TRAUMA - VAGINAL W/O INST (SmtHd)	1	0	0.019846	0.0198457	0.019846	0.019846
XPPS18	OB TRAUMA - VAGINAL W INSTRUMENT (SmtSE)	1	0	0.038921	0.0389207	0.038921	0.038921
XPPS19	OB TRAUMA - VAGINAL W/O INST (SmtSE)	1	0	0.003275	0.0032746	0.003275	0.003275
LPPS18	OB TRAUMA - VAGINAL W INSTRUMENT (LL)	1	0	0.062898	0.062898	0.062898	0.062898
LPPS19	OB TRAUMA - VAGINAL W/O INSTRUMENT (LL)	1	0	0.013427	0.0134274	0.013427	0.013427
UPPS18	OB TRAUMA - VAGINAL W INSTRUMENT (UL)	1	0	0.215583	0.215583	0.215583	0.215583
UPPS19	OB TRAUMA - VAGINAL W/O INSTRUMENT (UL)	1	0	0.026264	0.0262639	0.026264	0.026264

*PSI\_COMPOSITE.SAS*

PATIENT SAFETY INDICATOR COMPOSITE

Variable	Label	N	Mean
COMP1	PATIENT SAFETY FOR SELECTED INDICATORS	2	1.298
COMP1VAR	COMPOSITE VARIANCE	2	0.008517
COMP1SE	COMPOSITE SE	2	0.092289
COMP1WHT	COMPOSITE WEIGHTED DENOMINATOR	2	2483.88