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Risk Adjustment Tool for Length of Stay and Mortality – User Guide

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2 INTRODUCTION

2.1 PURPOSE

The risk-adjustment tool provides a method of benchmarking length of stay and mortality using Canadian trauma registry coefficients by copy data from your facility into a simple, easy to use excel spreadsheet. This document includes instruction on how to build the required data extracts using Digital Innovation (DI) Report Writer (RW) software and instructions on using the risk adjustment tool. This document will also provide instructions on data extract formats for sites that do not use DI software.

2.2 INTENDED AUDIENCE

The target audience for this document is trauma registrars and managers who use the DI RW software or other software.

3 GENERAL DATA EXTRACT REQUIREMENTS

3.1 PATIENT POPULATION

The risk adjustment tool is designed for the following patient population for mortality:

Inclusions

- All adults (≥ 16 years of age) and
- Must have major trauma, defined as an Injury Severity Score (ISS) >12

Exclusions

- Patients coded dead on arrival or patients who arrived with no vital signs or patients who died within 30 minutes

The risk adjustment tool is designed for the following patient population for LOS:

Inclusions

- All adults (≥ 16 years of age) and
- Must have major trauma, defined as an Injury Severity Score (ISS) >12 and
- Who were discharged alive

Exclusions

- All mortalities

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3.2 FIELD REQUIREMENTS

The risk adjustment tool requires the data to conform to the patient population and meet the following field requirements for the mortality risk adjustment:

Field Name	Requirements
Mortality	Integer of 1 if dead and 0 if alive (blanks not permitted).
Age	Integer from 0 – 150 (blanks not permitted).
AIS codes (up to 40)	AIS codes in AIS98 or AIS2005. Up to 40 codes are permitted with the most responsible code listed first.
Mechanism of Injury	ICD10 external cause of injury code.
Glasgow Coma Scale (GCS)	The total GCS score taken within the first 15 minutes of arrival at the trauma centre. Available values are GCS score as an integer, blanks, “II”, “UU”. Any GCS that can’t be evaluated because of intubation/sedation or other reasons should be left either blank or “II” or “UU”.
Systolic Blood Pressure (SBP)	The total SBP score taken within the first 15 minutes of arrival at the facility. Available values are integer, blanks, “II”, “UU”.
Facility Transfer	Integer of 1 if the patient was admitted to the Emergency Department or admitted an inpatient unit at another hospital for the same trauma prior to arriving at the final facility. Integer of 0 if the patient was only treated at the final facility (blanks not permitted).
Gender	Integer of 1 if female and integer of 0 if male.

The risk adjustment tool requires the data to conform to the patient population and meet the following field requirements for the LOS risk adjustment:

Field Name	Requirements
Length of Stay	Integer representing the length of stay in days from the time the patient is admitted to the time the patient is discharged.
Age	Integer from 0 – 150 (blanks not permitted)
AIS codes 1 up to 40	AIS codes in AIS98 or AIS2005. Up to 40 codes are permitted with the most responsible code listed first.
Mechanism of Injury	ICD10 external cause of injury code.
Glasgow Coma Scale	The total GCS score taken within the first 15 minutes of arrival at the trauma centre. Available values are GCS score as an integer, blanks, “II”, “UU”. Any GCS that can’t be evaluated because of intubation/sedation or other reasons should be left either blank or “II” or “UU”.
Systolic Blood Pressure	The total SBP score taken within the first 15 minutes of arrival at the facility. Available values are integer, blanks, “II”, “UU”.
Facility Transfer	Integer of 1 if the patient was admitted to the Emergency Department or admitted an inpatient unit at another hospital for the same trauma prior to arriving at the final facility. Integer of 0 if the patient was only treated at the final facility (blanks not permitted).
Gender	Integer of 1 if female and integer of 0 if male.

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4 INSTRUCTIONS FOR DI USERS

4.1 REQUIREMENTS FOR DI USERS

Digital Innovation Collector
Digital Innovation Report Writer
Microsoft Excel

4.2 EXTRACTING DATA FOR DI USERS

The functionality of the risk adjustment tool depends on data being in the **exact format and order** as that which is outlined in this document.

The process for initially preparing and using trauma registry data in this tool is:

- a. Create three coded variables in RW. These coded variables convert data to the required format and will be used as data elements in the final data extracts.
 - i. Gender (RISKADJ_GEN)
 - ii. Transfers from Acute Care (RISKADJ_TRAN)
 - iii. Dead (RISKADJ_DEAD)
- b. Create two data table reports in RW according to the exact specifications outlined below for each risk-adjustment report (length of stay (LOS) and mortality).
- c. Copy the exported data into the provided Excel worksheet.

4.3 IMPORTANT DATA FORMATTING NOTES

The following instructions assume that null values exported from DI Report Writer conform to the following format:

- Blanks for not entered
- "I" for not applicable/inappropriate
- "UU" for unknown


If your format differs, please customize the output to conform to the format above.

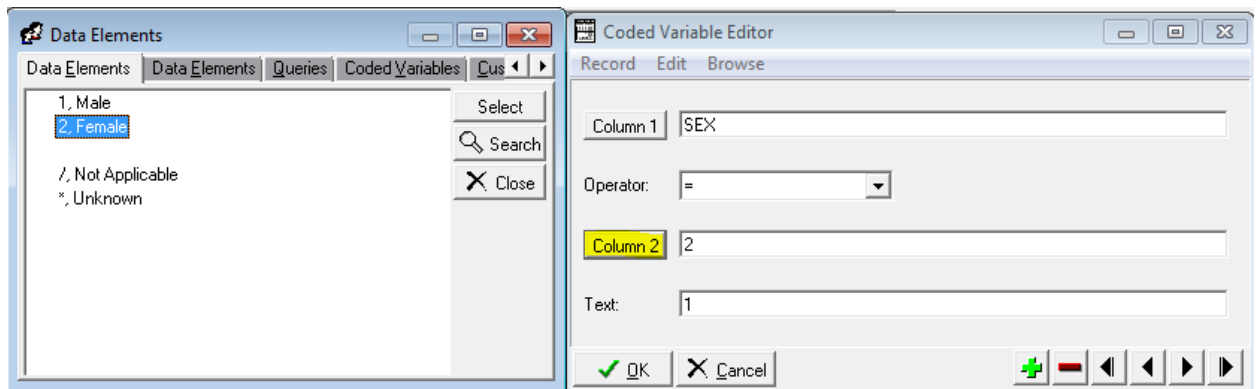
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5 BUILDING CODED VARIABLES FOR DI USERS

5.1 CREATE A CODED VARIABLE FOR GENDER (RISKADJ_GEN)

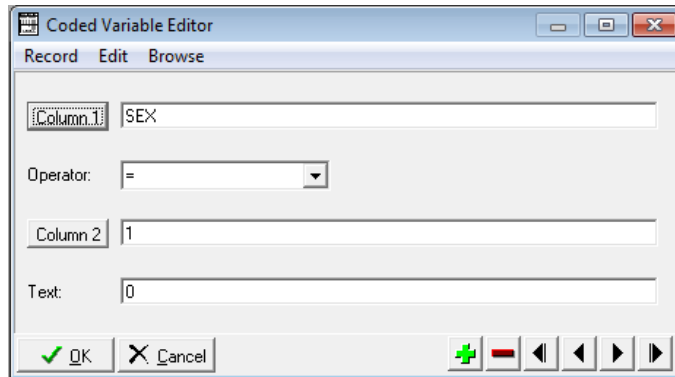
This coded variable is used to assign a value of “1” when a patient is female and a value of “0” when a patient is male.

1. Create a new coded variable in RW using either the **Coded Variable - Add** function from the main RW screen or by selecting **Coded Variable – Add** from the **Define RW** menu. This will bring up the Coded Variable Editor screen.
2. Enter the coded variable **Name** as RISKADJ_GEN.
3. Enter the **Description** as Risk Adjusted – Gender.
4. Select  and enter the following:
 - **Column 1:** SEX
*Click on the **Column 1** button and select SEX (or the Collector data element used to record patient gender if the element name differs) from the data element list.*
 - **Operator:** =
 - **Column 2:** System generated number for Female
*Click on the **Column 2** button and select Female. The number assigned to Female will populate for Column 2. This number may vary between registries, depending on system setup.*
 - **Text:** 1

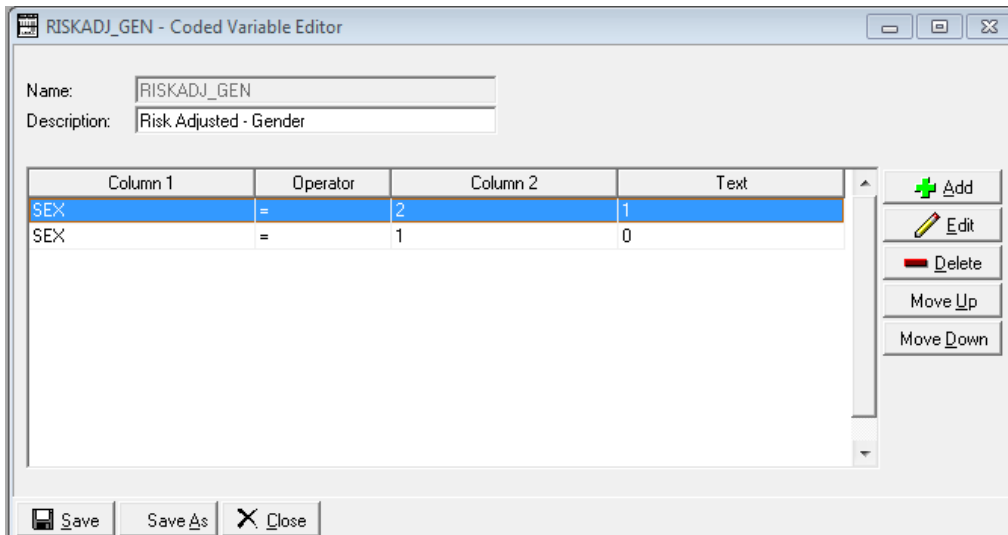


5. Select **OK**. On the Coded Variable Editor screen, select  again and enter the following as per the instructions in step 4:
 - a. **Column 1:** SEX (*or the Collector data element used to record patient gender*).
 - b. **Operator:** =
 - c. **Column 2:** System generated number for Male.
 - d. **Text:** 0

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6. Select **Ok**.
7. **Save** the RISKADJ_GEN coded variable. **Close** the Coded Variable Editor.



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5.2 CREATE A CODED VARIABLE FOR TRANSFERS (RISKADJ_TRAN) FOR DI USERS

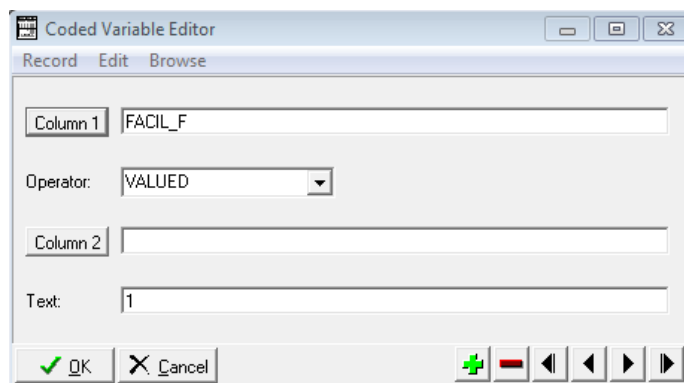
This coded variable is used to assign a value of “1” when a patient is transferred from an acute care facility or a value of “0” when a patient is brought to the definitive facility directly from the scene.

The specific Report Writer data elements used to indicate a transfer from acute care will vary between registries.


To create this coded variable, first determine which Collector data element can be used to indicate if a patient was transferred from another acute care facility or was brought to the definitive/lead/accepting facility directly from the scene. This will most likely be the presence of a facility ID in the transferring acute facility data element (e.g. Referring/First/Primary Facility ID).

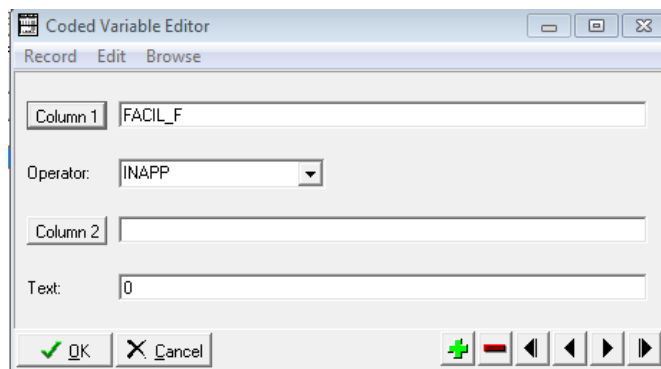
In the example provided below, the RISKADJ_TRAN coded variable utilizes the Collector data element that contains the facility ID of the first sending/referring acute care facility (FACIL_F). Where that field is VALUED (i.e. a facility ID has been entered), RW will assign a value of 1 to indicate that the patient was transferred. Where the data element is equal to Inappropriate (inappropriate is entered into this data element when there is no referring acute care facility), a value of 0 is assigned.

1. Create a new coded variable in RW using either the **Coded Variable - Add** function from the main RW screen or by selecting **Coded Variable – Add** from the **Define RW** menu. This will bring up the Coded Variable Editor screen.
2. Enter the coded variable **Name** as RISKADJ_TRAN.
3. Enter the **Description** as Risk Adjusted – Transfers.
4. Select  and enter the following:
 - a. **Column 1:** The field that will be used to identify that there was a referring acute care facility. Click on the **Column 1** button and select the field (e.g. First Facility ID, Referring Facility ID, Primary Hospital ID, etc.) from the data element list.
 - b. **Operator:** VALUED
(Select VALUED only if the presence of a facility ID in the selected data element indicates a transfer from acute care.)
 - c. **Column 2:** Leave this field blank.
 - d. **Text:** 1



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5. Select **OK**. On the Coded Variable Editor screen, select  again and enter the following as per the instructions in step 4:
 - a. **Column 1:** The field that will be used to identify that there was a referring acute care facility. Click on the **Column 1** button and select the field (e.g. First Facility ID, Referring Facility ID, Primary Hospital ID, etc.) from the data element list.
 - b. **Operator:** INAPP
(Select INAPP only if a value of Inappropriate/Not Applicable in this field indicates that there was no other acute care facility responsible for transferring the patient).
 - c. **Column 2:** Leave this field blank.
 - d. **Text:** 0



Coded Variable Editor

Record Edit Browse

Column 1: FACIL_F

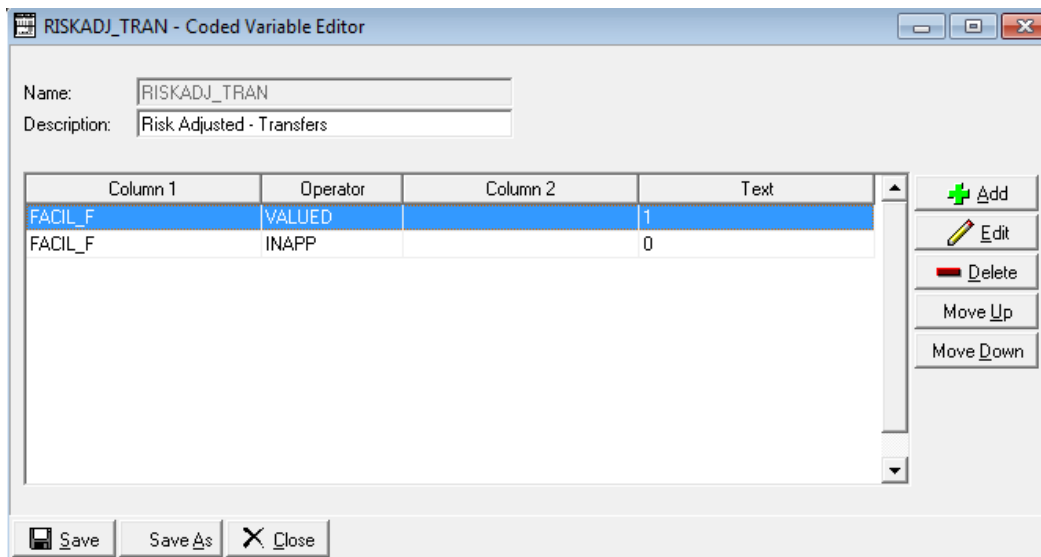
Operator: INAPP

Column 2:

Text: 0

OK Cancel Add

6. Select **Ok**.
7. **Save** the RISKADJ_TRAN coded variable. **Close** the Coded Variable Editor.



RISKADJ_TRAN - Coded Variable Editor

Name: RISKADJ_TRAN

Description: Risk Adjusted - Transfers

Column 1	Operator	Column 2	Text
FACIL_F	VALUED		1
FACIL_F	INAPP		0


Add Edit Delete Move Up Move Down

Save Save As Close

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5.3 CREATE A CODED VARIABLE FOR MORTALITY (RISKADJ_DEAD) FOR DI USERS

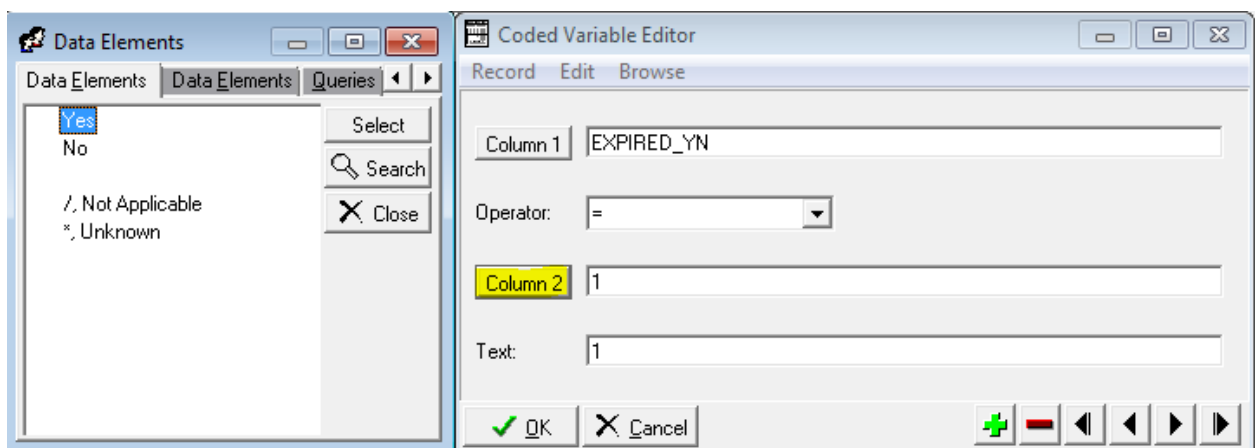
This coded variable is used to assign a value of “1” when a patient dies in hospital and a value of “0” when a patient is discharged from hospital alive.

1. Create a new coded variable in RW using either the **Coded Variable - Add** function from the main RW screen or by selecting **Coded Variable – Add** from the **Define RW** menu. This will bring up the Coded Variable Editor screen.
2. Enter the coded variable **Name** as RISKADJ_DEAD.
3. Enter the **Description** as Risk Adjusted – Dead.
4. Select  to create the first parameter in the coded variable. If your registry has a separate Expired data element that records expired as Yes or No, follow Option 1 (steps 4a and 5a). If your registry records expired within the Separation/Discharge Disposition data element, follow Option 2 (steps 4b and 5b).

a. CODED VARIABLE SETUP - OPTION 1

If your registry has a data element that records Expired as Yes or No, the following instructions may be used.

- i. **Column 1:** EXPIRED_YN
*Click on the **Column 1** button and select EXPIRED_YN (or the Collector data element used to record expired status if the element name differs) from the data element list.*
- ii. **Operator:** =
- iii. **Column 2:** System generated number for Yes.
*Click on the **Column 2** button and select Yes. The number assigned to Yes will populate for Column 2. This number may vary between registries, depending on system setup.*
- iv. **Text:** 1

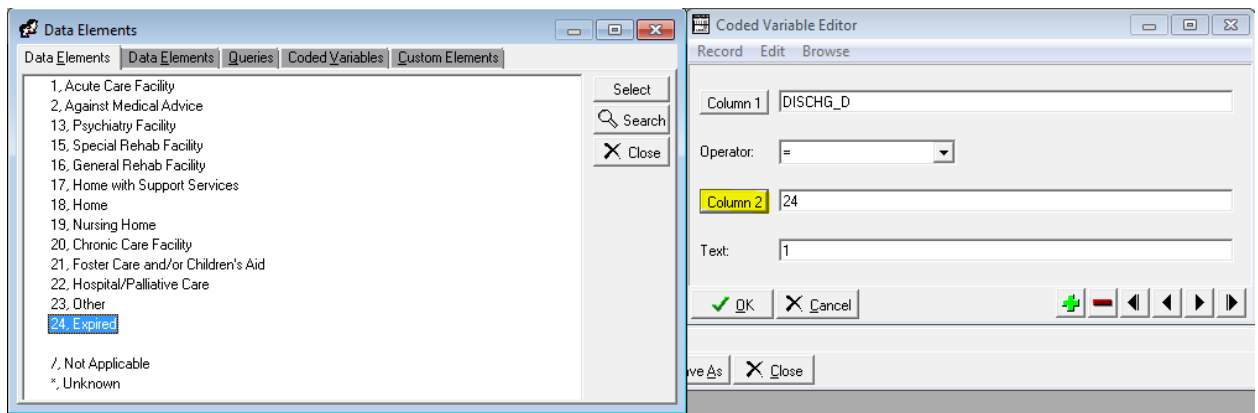



b. CODED VARIABLE SETUP - OPTION 2

If your registry records expired in the Separation/Discharge Disposition field, the following instructions may be used.

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- i. **Column 1:** DISCHG_D
 Click on the **Column 1** button and select DISCHG_D (or the Collector data element used to record separation disposition if element name differs) from the data element list.
- ii. **Operator:** =
- iii. **Column 2:** System generated number for Expired
 Click on the **Column 2** button and select Expired. The number assigned to Expired will populate for Column 2. This number may vary between registries, depending on system setup.
- iv. **Text:** 1

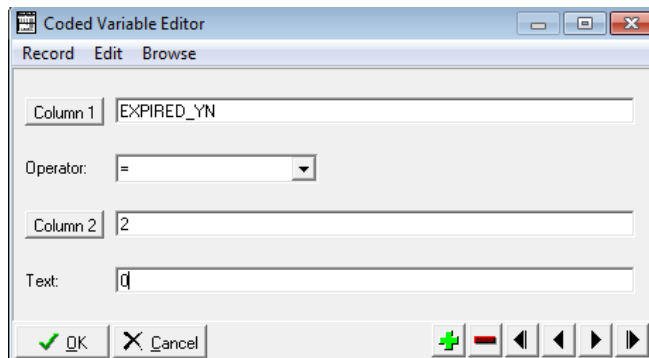


5. Select **OK**. On the Coded Variable Editor screen, select  again and enter the following as per instructions in step 4 (follow the same option number as in step 4):

a. CODED VARIABLE SETUP - OPTION 1

If your registry has a data element that records Expired as Yes or No, the following instructions may be used.

- i. **Column 1:** EXPIRED_YN (or the Collector data element used to expired status).
- ii. **Operator:** =
- iii. **Column 2:** System generated number for No.
- iv. **Text:** 0

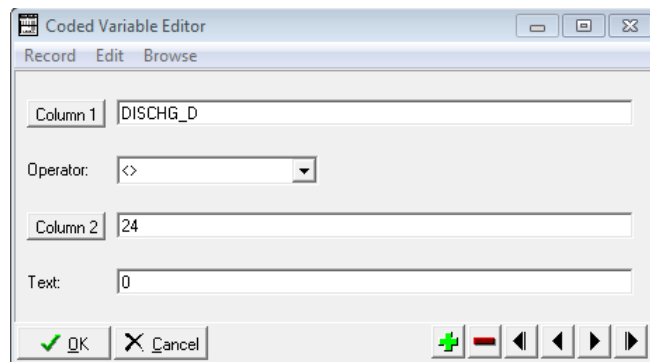


b. CODED VARIABLE SETUP - OPTION 2

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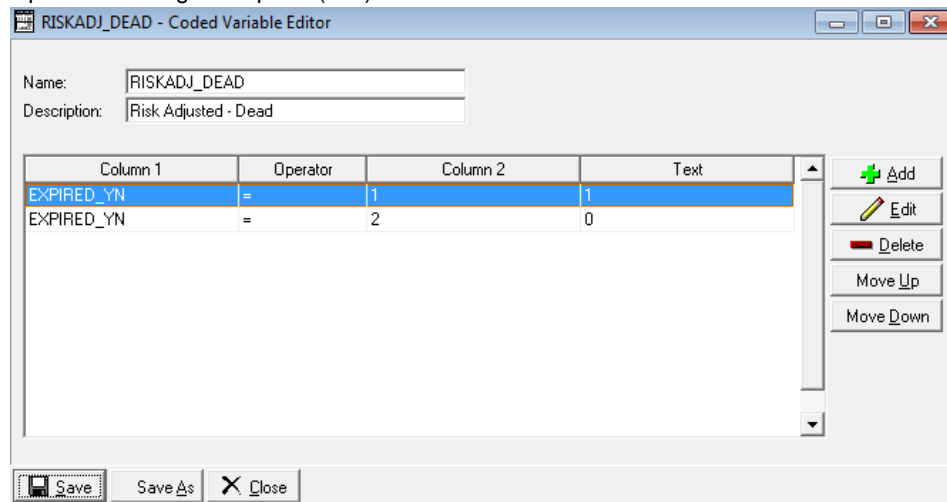
If your registry records expired within the Separation/Discharge Disposition field, the following instructions may be used.

- i. **Column 1:** DISCHG_D (or the Collector data element used to separation disposition).
- ii. **Operator:** <>
- iii. **Column 2:** System generated number for Expired.
- iv. **Text:** 0



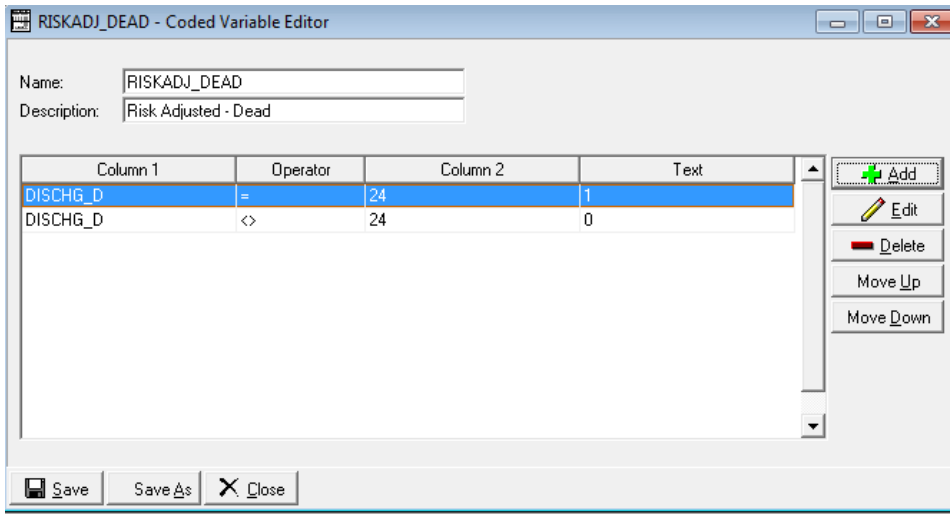
6. Save the RISKADJ_DEAD coded variable. **Close** the Coded Variable Editor.

Option 1 – Using an Expired (Y/N) data element.



Option 2 – Using the Separation Disposition data element.

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6 BUILDING THE DATA EXTRACT FOR DI USERS

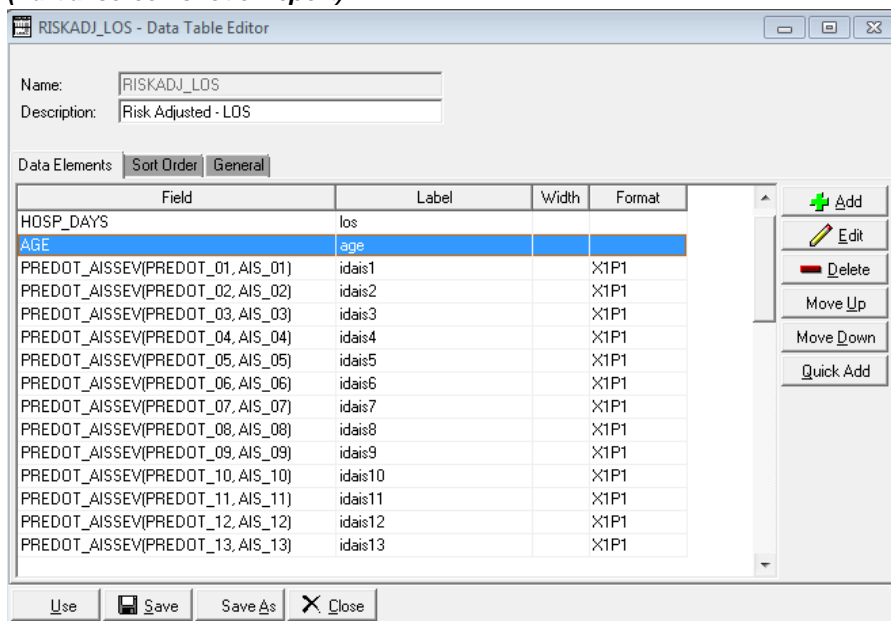
6.1 RISK-ADJUSTED LENGTH OF STAY DATA EXTRACT

In Report Writer, create a Data Table Summary Report using the following elements in the exact format and order listed in the table below.

Suggested Report Name: RISKADJ_LOS

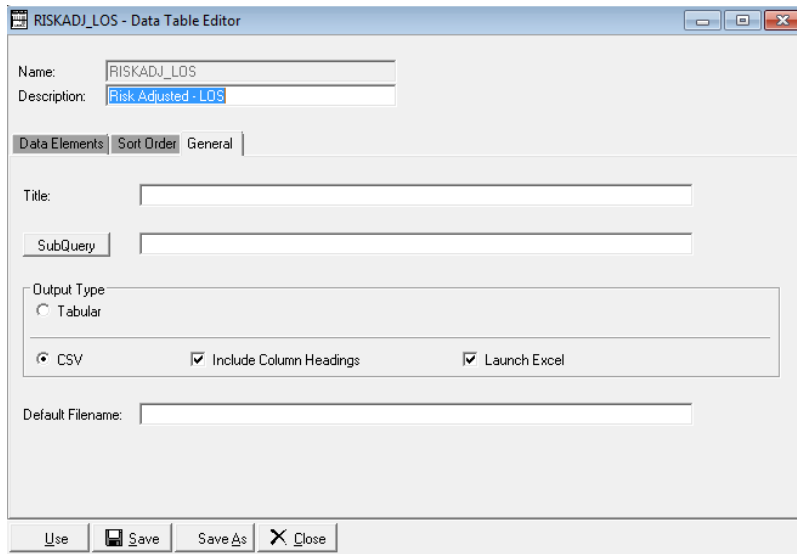
Suggested Description: Risk Adjusted – LOS

(Partial screen shot of report)



Under the General tab select “CSV”, “Include Column Headings” and “Launch Excel”. For DBF Export, convert to Excel once the export is complete.

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6.1.1 Risk Adjusted Length of Stay Data Extract Specifications

Data Element	Report Writer Field	Label	Format
Total Hospital Length of Stay (days)	HOSP_DAYS	los	
Age (years)	AGE	age	
AIS predot and severity	PREDOT_AISSEV(PREDOT_01, AIS_01)	idais1	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_02, AIS_02)	idais2	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_03, AIS_03)	idais3	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_04, AIS_04)	idais4	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_05, AIS_05)	idais5	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_06, AIS_06)	idais6	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_07, AIS_07)	idais7	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_08, AIS_08)	idais8	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_09, AIS_09)	idais9	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_10, AIS_10)	idais10	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_11, AIS_11)	idais11	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_12, AIS_12)	idais12	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_13, AIS_13)	idais13	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_14, AIS_14)	idais14	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_15, AIS_15)	idais15	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_16, AIS_16)	idais16	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_17, AIS_17)	idais17	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_18, AIS_18)	idais18	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_19, AIS_19)	idais19	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_20, AIS_20)	idais20	X1P1

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Data Element	Report Writer Field	Label	Format
AIS predot and severity	PREDOT_AISSEV(PREDOT_21, AIS_21)	idais21	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_22, AIS_22)	idais22	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_23, AIS_23)	idais23	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_24, AIS_24)	idais24	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_25, AIS_25)	idais25	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_26, AIS_26)	idais26	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_27, AIS_27)	idais27	X1P1
Primary ICD10CA External Cause Code	ICD10EXT_1	mech	
Total GCS on arrival (Definitive /Accepting Facility)	GCS_A	gcs	
Systolic Blood Pressure on arrival (Definitive/Accepting Facility)	SBP_D	sbp	
Coded Variable	RISKADJ_TRAN	transfer	
Coded Variable	RISKADJ_GEN	female	

6.2 RISK-ADJUSTED MORTALITY DATA EXTRACT FOR DI USERS

In Report Writer, create a Data Table Summary Report using the following elements in the format and order listed.

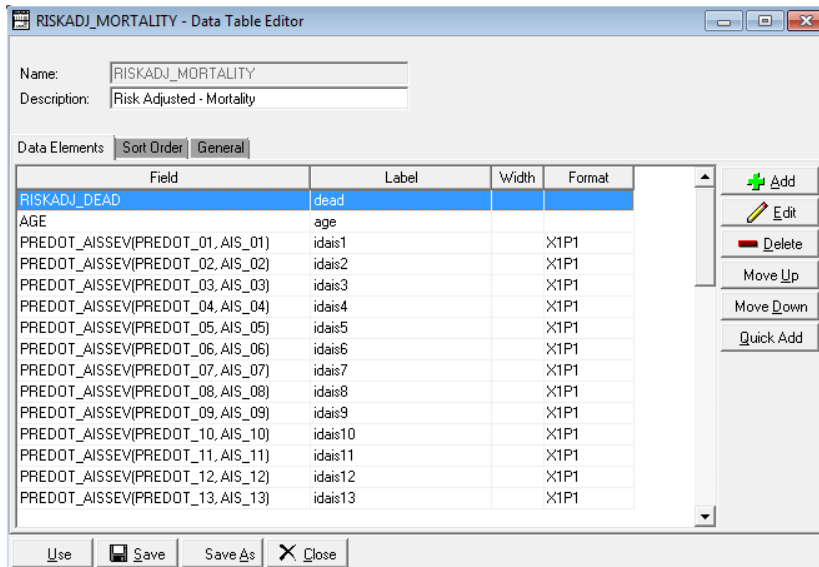
Suggested Report Name: RISKADJ_MORTALITY

Suggested Description: Risk Adjusted – MORTALITY

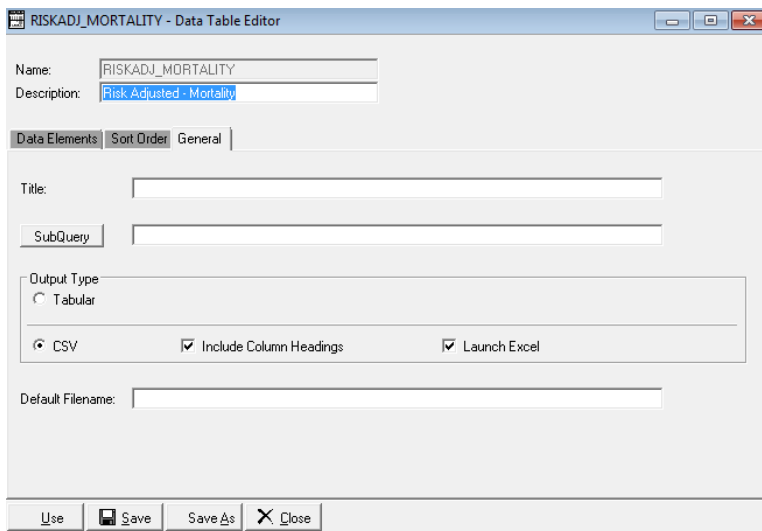
TIP: There is significant overlap between the two data extracts. To eliminate the need to create the mortality extract from scratch, first create the Risk Adjusted Length of Stay Data Table Summary Report. Once it is saved, select Save As then enter the name for the Risk Adjusted Mortality report. Change the first listed data element to the Coded Variable RISKADJ_DEAD.

(Partial screen shot of report)

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Under the General tab select “CSV”, “Include Column Headings” and “Launch Excel”. For DBF Export, convert to Excel once the export is complete.



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6.2.1 Risk Adjusted Mortality Data Extract Specifications for DI users

Data Element	Report Writer Field	Label	Format
Coded Variable	RISKADJ_DEAD	dead	
Age (years)	AGE	age	
AIS predot and severity	PREDOT_AISSEV(PREDOT_01, AIS_01)	idais1	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_02, AIS_02)	idais2	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_03, AIS_03)	idais3	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_04, AIS_04)	idais4	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_05, AIS_05)	idais5	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_06, AIS_06)	idais6	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_07, AIS_07)	idais7	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_08, AIS_08)	idais8	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_09, AIS_09)	idais9	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_10, AIS_10)	idais10	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_11, AIS_11)	idais11	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_12, AIS_12)	idais12	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_13, AIS_13)	idais13	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_14, AIS_14)	idais14	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_15, AIS_15)	idais15	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_16, AIS_16)	idais16	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_17, AIS_17)	idais17	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_18, AIS_18)	idais18	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_19, AIS_19)	idais19	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_20, AIS_20)	idais20	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_21, AIS_21)	idais21	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_22, AIS_22)	idais22	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_23, AIS_23)	idais23	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_24, AIS_24)	idais24	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_25, AIS_25)	idais25	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_26, AIS_26)	idais26	X1P1
AIS predot and severity	PREDOT_AISSEV(PREDOT_27, AIS_27)	idais27	X1P1
Primary ICD10CA External Cause Code	ICD10EXT_1	mech	
Total GCS on arrival (Definitive/Accepting Facility)	GCS_A	gcs	
Systolic Blood Pressure on arrival (Definitive/Accepting Facility)	SBP_D	sbp	
Coded Variable	RISKADJ_TRAN	transfer	
Coded Variable	RISKADJ_GEN	female	

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6.3 VERIFYING ACCURACY OF THE DATA EXTRACT FOR DI USERS

It is essential to verify that data has been extracted correctly prior to using the risk-adjustment tools.

To validate the format and order of data, temporarily include trauma number to each data extract and run a sample set of data. Compare the data in the extract to the corresponding record in Collector. Ensure that the following is correct:

- The RISKADJ_GEN coded variable has assigned a value of 1 for female patients and 0 for male patients.
- The RISKADJ_TRAN coded variable has assigned a value of 1 for transferred patients and 0 for a direct from scene patients.
- The RISKADJ_DEAD coded variable has assigned a value of 1 for expired patients and 0 for patients who were discharged alive.
- The PREDOT_AISSEV(PREDOT_##, AIS_##) elements have been extracted in the correct order and there are no mismatches between predot and severity. Confirm that the format is #####.#
- The GCS and SBP are from the Definitive/Lead/Accepting Facility.

6.4 RUNNING THE DATA EXTRACTS FOR DI USERS

1. Once the data validation process has been completed, select the data table report RISKADJ_MORTALITY from the **Run Report** and select **Run**. Leave the Output as Screen.
2. Enter the report parameters on the Specify Records screen.
3. Select **Ok**.
4. A comma-separated values file (.csv) file will be created.
5. To save the document, select **Save**. Select **No** to the Microsoft Excel warning of "Do you want to keep using that [.csv] format?"
6. Browse to the location where the file will be saved.
7. Enter a **File name**.
8. Under **Save as type**, select Excel workbook (*.xlsx) from the drop-down list. Select **Save**.
9. Repeat steps 1 to 8 for RISKADJ_LOS.

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7 USING THE RISK ADJUSTMENT TOOL

7.1 USING THE RISK ADJUSTMENT TOOL FOR MORTALITY

Perform the following steps to obtain your facility's observed to expected mortality ratios. Separate files have been provided for use with data coded in AIS 98 and AIS 2005.

7.1.1 Where Injuries are Coded in AIS 98

For mortality data from a time period where injuries were coded using AIS98, the following instructions should be used:

1. Open the Risk Adjusted – Mortality Excel files that were created by DI report writer or by your software adhering to the requirements in section 3.
2. Download the Worksheet_Mortality_nomacros_vf_AIS98.zip file.
3. Extract the Worksheet_Mortality_nomacros_vf_AIS98.zip file on your computer.
4. Open the extracted Worksheet_Mortality_nomacros_vf_AIS98.xlsx file.
5. Go to the data entry tab. Copy the data from the RW generated mortality Excel file into the data entry tab on row 2 (just below the row 1 column names). Do not repeat the column headings, but use them as a guide to ensure that data is copied to the correct column. The provided file has columns for AIS 28-40, which will need to be left blank if you only have 27 AIS codes. Data from the RW generated Excel file will need to be copied in two separate sections in order to leave these columns blank.
6. Perform a visual check to ensure that the data you've copied matches the column headings in the Worksheet_Mortality_nomacros_vf_AIS98 file.
7. Click on the SMR tab and you should see the results for your site.
8. If you see errors on the SMR tab, go back to the data entry tab. Scroll to the right of the data entry tab past the solid black column (column AW). Review all columns from AW to DQ for each row until you find the error. For each row that contains an error, review the data entered in columns A to AU until you find the cause of the error. In most cases it will be due to invalid data. Correct each error and review the results in the SMR tab.

7.1.2 Where Injuries are Coded in AIS 2005

For mortality data from a time period where injuries were coded using AIS2005, the following instructions should be used:

1. Open the Risk Adjusted – Mortality Excel files that were created by DI report writer or by your software adhering to the requirements in section 3.
2. Download the Worksheet_Mortality_nomacros_vf_AIS2005.zip file.
3. Extract the Worksheet_Mortality_nomacros_vf_AIS2005.zip file on your computer.
4. Open the extracted Worksheet_Mortality_nomacros_vf_AIS2005.xlsx file.
5. Go to the data entry tab. Copy the data from the RW generated mortality Excel file into the data entry tab on row 2 (just below the row 1 column names). Do not repeat the column headings, but use them as a guide to

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ensure that data is copied to the correct column. The provided file has columns for AIS 28-40, which will need to be left blank if you only have 27 AIS codes. Data from the RW generated Excel file will need to be copied in two separate sections in order to leave these columns blank.

6. Perform a visual check to ensure that the data you've copied matches the column headings in the *Worksheet_Mortality_nomacros_vf_AIS2005* file.
7. Click on the SMR tab and you should see the results for your site.
8. If you see errors on the SMR tab, go back to the data entry tab. Scroll to the right of the data entry tab past the solid black column (column AW). Review all columns from AW to DQ for each row until you find the error. For each row that contains an error, review the data entered in columns A to AU until you find the cause of the error. In most cases it will be due to invalid data. Correct each error and review the results in the SMR tab.

7.2 USING THE RISK ADJUSTMENT TOOL FOR LOS

Perform the following steps to obtain your facility's observed to expected LOS ratios. Separate files have been provided for use with data coded in AIS 98 and AIS 2005.

7.2.1 Where Injuries are Coded in AIS 98

1. Open the Risk Adjusted – LOS Excel files that were created by DI report writer or by your software adhering to the requirements in section 3.
2. Download the *Worksheet_LOS_nomacros_vf_AIS98.zip* file.
3. Extract the *Worksheet_LOS_nomacros_vf_AIS98.zip* file on your computer.
4. Open the extracted *Worksheet_LOS_nomacros_vf_AIS98.xlsx* file.
5. Go to the data entry tab. Copy the data from the RW generated LOS Excel file into the data entry tab on row 2 (just below the row 1 column names). Do not repeat the column headings, but use them as a guide to ensure that data is copied to the correct column. The provided file has columns for AIS 28-40, which will need to be left blank if you only have 27 AIS codes. Data from the RW generated Excel file will need to be copied in two separate sections in order to leave these columns blank.
6. Perform a visual check to ensure that the data you've copied matches the column headings in the *Worksheet_LOS_nomacros_vf_AIS98* file.
7. Click on the SMR tab and you should see the results for your site.
8. If you see errors on the SMR tab, go back to the data entry tab. Scroll to the right of the data entry tab past the solid black column (column AW). Review all columns from AW to DQ for each row until you find the error. For each row that contains an error, review the data entered in columns A to AU until you find the cause of the error. In most cases it will be due to invalid data. Correct each error and review the results in the SMR tab.

7.2.2 Where Injuries are Coded in AIS 2005

1. Open the Risk Adjusted – LOS Excel files that were created by DI report writer or by your software adhering to the requirements in section 3.

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2. Download the Worksheet_LOS_nomacros_vf_AIS2005.zip file.
3. Extract the Worksheet_LOS_nomacros_vf_AIS2005.zip file on your computer.
4. Open the extracted Worksheet_LOS_nomacros_vf_AIS2005.xlsx file.
5. Go to the data entry tab. Copy the data from the RW generated LOS Excel file into the data entry tab on row 2 (just below the row 1 column names). Do not repeat the column headings, but use them as a guide to ensure that data is copied to the correct column. The provided file has columns for AIS 28-40, which will need to be left blank if you only have 27 AIS codes. Data from the RW generated Excel file will need to be copied in two separate sections in order to leave these columns blank.
6. Perform a visual check to ensure that the data you've copied matches the column headings in the Worksheet_LOS_nomacros_vf_AIS2005 file.
7. Click on the SMR tab and you should see the results for your site.
8. If you see errors on the SMR tab, go back to the data entry tab. Scroll to the right of the data entry tab past the solid black column (column AW). Review all columns from AW to DQ for each row until you find the error. For each row that contains an error, review the data entered in columns A to AU until you find the cause of the error. In most cases it will be due to invalid data. Correct each error and review the results in the SMR tab.