Surgical Site Infection Data Validation

Overview, Instructions, and Validation Forms

October 1, 2015

Updated: October 12, 2015

California Department of Public Health
Healthcare-Associated Infections Program

Preface

This workbook contains all necessary information, instructions, and forms needed by hospital infection prevention program staff to successfully complete the CDPH HAI Program Validation process for 2015.

Important Acronyms and Abbreviations

CDPH	California Department of Public Health
COLO	Colon surgery
CSEC	Cesarean section
HAI	Healthcare-Associated Infection
HPRO	Hip prosthesis
HYST	Abdominal hysterectomy
IP	Infection Preventionist
NHSN	National Healthcare Safety Network
SIR	Standardized Infection Ratio
SSI	Surgical site infection

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Overview

As part of a three-year validation plan endorsed by the CDPH HAI Advisory Committee, the CDPH HAI Program is offering SSI Data Validation in 2015. This data validation has two objectives:

1. Assess surveillance practices to improve SSI case-finding
2. Assess the accuracy of surgical denominator data elements reported to NHSN

Hospitals can benefit from both objectives of the validation process. Past validation projects have shown incomplete case-finding in many California hospitals. By assessing SSI case-finding in 2015, hospital infection prevention program staff will be able to review and refine their surveillance practices, as well as correct reporting errors discovered during validation.

This is the first year the HAI Program is asking hospitals to validate denominator data. Denominator data elements are known risk factors for surgical site infections and are used for risk adjustment when NHSN calculates standardized infection ratios (SIR). Reporting accurate denominator data elements allows NHSN to calculate more accurate SSI SIRs for your hospital. SSI validation will allow hospital staff to better assess their true SSI incidence, which is critical to measuring progress over time and directing prevention activities with greater confidence. The processes are designed to be easily incorporated into regular surveillance practices, so hospitals can sustain the gains made from validation.

Validation Support

While validation is self-directed, guidance is available from the HAI Program SSI Validation team. The SSI Validation team is a multi-disciplinary group based in the HAI Program's Richmond office with expertise in HAI data, reporting, surveillance, and prevention. They can be reached at HAIProgram@cdph.ca.gov.

Validation Process Summary

- List all colon surgery, abdominal hysterectomy, cesarean section, and hip prosthesis procedures performed in the first two quarters of 2015
- Use post-operative ICD diagnosis "flag" codes (e.g. ICD-9 567.22: Peritoneal abscess) to identify records with high likelihood of SSI for review (max. 40 records, likely fewer)
- Review all identified records for SSI
- Review select denominator data elements for accuracy
    - For colon surgery – review surgical duration & wound class
    - For abdominal hysterectomy – review BMI
    - For cesarean section – review BMI & diabetes
    - For hip prosthesis – review surgical duration & diabetes
- Complete validation forms 1-4
- Record final results and perform calculations in "Review of Findings" section
- Submit data from Review of Findings to the CDPH HAI Program via online submission form

Note: While validation is a voluntary process, hospital participation will be noted in the HAI in California hospitals annual public report.

Timeline

September 30	Validation begins
October 26	Online results form released; Ongoing support from HAI Program
December 4	Deadline to enter results in online form and attest to participation
December – January	Correct data from 3rd and 4th quarters of 2015 based on validation findings
January 2016	Analysis of results and follow up as necessary by CDPH HAI Program

Preparing for Validation

STEP 1: Identify all patients who had the each of the four inpatient procedures performed in the first two quarters of 2015 (January 1 – June 30). To do this, perform a "look back" using hospital billing data to find all patients with an NSHN-defined surgical procedure code (Table 1). Save these lists for your reference. Ensure every procedure identified has been reported to NHSN.

Table 1: NHSN-defined Surgical Procedure codes

	Colon Surgery	Abdominal Hysterectomy	Cesarean Section	Hip Prosthesis
ICD-9 codes	17.31, 17.32, 17.33, 17.34, 17.35, 17.36, 17.39, 45.03, 45.26, 45.41, 45.49, 45.52, 45.71, 45.72, 45.73, 45.74, 45.75, 45.76, 45.79, 45.81, 45.82, 45.83, 45.92, 45.93, 45.94, 45.95, 46.03, 46.04, 46.10, 46.11, 46.13, 46.14, 46.43, 46.52, 46.75, 46.76, 46.94	68.31, 68.39, 68.41, 68.49, 68.61, 68.69	74.0, 74.1, 74.2, 74.4, 74.91, 74.99	00.70, 00.71, 00.72, 00.73, 00.85, 00.86, 00.87, 81.51, 81.52, 81.53
CPT codes	44140, 44141, 44143, 44144, 44145, 44146, 44147, 44150, 44151, 44160, 44204, 44205, 44206, 44207, 44208, 44210	58150, 58152, 58180, 58200, 58210, 58541, 58542, 58543, 58544, 58548, 58570, 58571, 58572, 58573, 58951, 58953, 58954, 58956		27125, 27130, 27132, 27134, 27137, 27138, 27236, 27299

Note: For ICD-10 procedure codes, see Appendix A.

Before proceeding to Step 2, identify and report to NHSN any missed procedures.

STEP 2: For each patient identified in STEP 1, use hospital billing data to identify the subset of patients that had one or more ICD diagnosis "flag" codes (Table 2) during the specified post-operative period. These flag codes identify patients that MIGHT have had an SSI and help determine which medical records to review for validation.

Your billing or medical records office needs to query the billing data to look for diagnosis flag codes during the index surgical admission and any admission up to:

- **40 days** after surgery for colon, abdominal hysterectomy and cesarean section
  - Note: This would include a review up to 8/9/2015 if a surgery was performed on the final day of the second quarter (i.e., 6/30/2015)
- **100 days** after surgery for hip prosthesis
  - Note: This would include a review up to 10/8/2015 if a surgery was performed on the final day of the second quarter (i.e., 6/30/2015)

Table 2: ICD-9 Diagnosis "Flag" Codes by Surgery Type

Colon Surgery	Abdominal Hysterectomy	Cesarean Section	Hip Prosthesis
567.21, 567.22, 567.29, 567.38, 569.5, 569.61, 569.81, 682.2, 998.31, 998.32, 998.51, 998.59, 998.6	567.21, 567.22, 567.29, 682.2, 998.31, 998.32, 998.51, 998.59	567.21, 567.22, 567.29, 682.2, 998.31, 998.32, 998.51, 998.59	996.60, 996.66, 996.67, 996.69, 998.51, 998.59

Note: For ICD-10 flag codes, see Appendix B.

STEP 3: Produce four separate lists of flagged procedures (one list for each procedure type) from the procedures identified in STEP 2. Include the information below on each list. Sort the lists by patient name or medical record number.

a. Patient name and/or medical record number
b. The ICD code or codes flagging the record
c. Original procedure date
d. Discharge date of the original procedure
e. Date of readmission (if applicable)

STEP 4: Using NHSN, generate an SSI Event line list for each procedure type during the relevant surveillance period in 2015. These lists should include SSI event dates through:

- **July 30, 2015** for colon, abdominal hysterectomy and cesarean section procedures
- **Sept. 28, 2015** for hip prosthesis procedures

Performing Validation

In this section refer to the four flagged procedure lists and the SSI Event line lists produced in STEP 3 & STEP 4 of Preparing for Validation. You will also need to refer to NHSN procedure data.

STEP 1: To determine which procedures to review, for EACH of the four flagged procedure lists

- If the number of flagged procedures is **>0 and ≤10**, number all flagged procedures 1 through 10 (as appropriate)
- If the number of flagged procedures is **>10**, divide the total by 10, and select every n^{th} event for review, numbering 1 through 10

Note: If the total number of records flagged for review (across all 4 procedures types) is less than 20, or if you desire**,** complete the optional Denominator Data Supplemental Validation form (page 14).

STEP 2: Record the following data. You will include this in the Review of Findings section at the end of this workbook and report these numbers to the CDPH HAI Program. (Do not include procedures from optional validation form here)

	Total number of procedures in first two quarters of 2015	Number of procedures identified through ICD "flag" codes	Number of procedures reviewed during validation
COLO			
HYST			
CSEC			
HPRO			

STEP 3: Add each procedure identified and numbered in STEP 1 to the corresponding SSI validation form, filling in applicable information (date of surgery, etc.).

- Enter COLO SSI data in Form 1 (page 10)
- Enter HYST SSI data in Form 2 (page 11)
- Enter CSEC SSI data in Form 3 (page 12)
- Enter HPRO SSI data in Form 4 (page 13)

STEP 4: For each procedure numbered in STEP 1, review each patient's medical record to verify your decision to report or not report an SSI to NHSN. Carefully follow NHSN protocols/definitions as defined in Chapter 9 of the Patient Safety Component Manual. Refer to the SSI Event line list and NHSN procedure data where necessary.

Complete the following sections in Forms 1 – 4.

- Was NHSN SSI criteria met? (If yes, indicate superficial, deep or organ/space SSI)
- Was SSI reported to NHSN? (If yes, indicate NHSN Event #)
- Was an SSI **Reported Correctly**? (i.e. the event met NHSN SSI criteria and was reported as an SSI prior to validation.)
- For those records where no SSI was reported to NHSN, indicate if:
  - Event **did not meet NHSN criteria**
    OR
  - SSI was **MISSED** (i.e. did meet NHSN SSI criteria but was not reported)

- Record select denominator data elements for each procedure type using both patient medical records and NHSN procedure data. Further details and NHSN definitions for each denominator data element are provided in Appendix C.
    - Note: To locate denominator data in NHSN you may choose to look up individual procedure records directly in NHSN. Another option is to produce an NHSN procedure line list with all necessary elements. Detailed instructions for doing this are available in Appendix D.
- Indicate if the denominator data were reported accurately (Table 3)

Table 3: Criteria for accurate reporting

Data Element:	Accurate if:
Duration	< 10 minutes discrepancy
Wound class	Wound classes agree
BMI	< 1.0 BMI unit discrepancy
Diabetes	Diabetes agree

STEP 5: Total the columns indicated at the bottom of each form. Keep this form on hand as it will be used to populate the Review of Findings section.

STEP 6: Follow instructions in the Review of Findings section to fill in the tables. We recommend populating each row in its entirety before continuing on in order to ensure data are reported for the correct procedure type. The tables and forms are color coded for your convenience. Calculations can be rounded to the nearest whole number.

STEP 7: Submit your results from the Review of Findings section to the CDPH HAI Program via an online form. The link to the form will be made available October 26, 2015.

NOTE: All hospitals should incorporate validation methods into ongoing surveillance practices to maximize case-finding and data accuracy for the remainder of 2015 and beyond.

Colon SSI Validation - Form 1

When review is complete, please make all necessary corrections to your data in NHSN

ICD Flag List No.	Date of Surgery (MM//DD)	Discharge date of index surgery (MM/DD)	Indicate which post-op ICD code(s) "flagged" this patient record	re-admitted within NHSN specified number of days of index surgery	Was NHSN SSI criteria met? Yes	Indicate: Superficial, Deep, Organ/Space	Was SSI reported to NHSN? Yes	Indicate: NHSN Event #	SSI was **Reported Correctly** (SSI met criteria & reported to NHSN) √	If NO SSI reported, complete this section: Event **did not meet NHSN criteria**: √	SSI was **MISSED** (SSI met criteria & should have been reported) √	Reason?	Surgical Duration: Duration as reported to NHSN	Duration from validation medical record review	Durations **agree** (Discrepancy < 10 min.)	Wound Class: Wound class as reported to NHSN	Wound class from validation medical record review	Wound classes **agree**
COLO 1				☐	☐		☐		☐	☐	☐				☐			☐
COLO 2				☐	☐		☐		☐	☐	☐				☐			☐
COLO 3				☐	☐		☐		☐	☐	☐				☐			☐
COLO 4				☐	☐		☐		☐	☐	☐				☐			☐
COLO 5				☐	☐		☐		☐	☐	☐				☐			☐
COLO 6				☐	☐		☐		☐	☐	☐				☐			☐
COLO 7				☐	☐		☐		☐	☐	☐				☐			☐
COLO 8				☐	☐		☐		☐	☐	☐				☐			☐
COLO 9				☐	☐		☐		☐	☐	☐				☐			☐
COLO 10				☐	☐		☐		☐	☐	☐				☐			☐
								COLO Total:	A:	B:	C:			D:			E:	

Abdominal Hysterectomy SSI Validation - Form 2

When review is complete, please make all necessary corrections to your data in NHSN

ICD Flag List No.	Date of Surgery (MM//DD)	Discharge date of index surgery (MM/DD)	Indicate which post-op ICD code(s) "flagged" this patient record	re-admitted within NHSN specified number of days of index surgery	Was NHSN SSI criteria met? Yes	Indicate: Superficial, Deep, Organ/Space	Was SSI reported to NHSN? Yes	Indicate: NHSN Event #	SSI was **Reported Correctly** (SSI met criteria & reported to NHSN) √	If NO SSI reported, complete this section: Event **did not meet NHSN criteria**: √	SSI was **MISSED** (SSI met criteria & should have been reported) √	Reason?	BMI: BMI as reported to NHSN (to the nearest tenth XX.X)	BMI from validation medical record review (to the nearest tenth XX.X)	BMI **agree** (Discrepancy < 1.0 unit)
HYST 1				☐	☐		☐		☐	☐	☐				☐
HYST 2				☐	☐		☐		☐	☐	☐				☐
HYST 3				☐	☐		☐		☐	☐	☐				☐
HYST 4				☐	☐		☐		☐	☐	☐				☐
HYST 5				☐	☐		☐		☐	☐	☐				☐
HYST 6				☐	☐		☐		☐	☐	☐				☐
HYST 7				☐	☐		☐		☐	☐	☐				☐
HYST 8				☐	☐		☐		☐	☐	☐				☐
HYST 9				☐	☐		☐		☐	☐	☐				☐
HYST 10				☐	☐		☐		☐	☐	☐				☐
								HYST Total:	A:	B:	C:			D:	

Cesarean Section SSI Validation - Form 3

When review is complete, please make all necessary corrections to your data in NHSN

ICD Flag List No.	Date of Surgery (MM//DD)	Discharge date of index surgery (MM/DD)	Indicate which post-op ICD code(s) "flagged" this patient record	re-admitted within NHSN specified number of days of index surgery	Was NHSN SSI criteria met? Yes Indicate: Superficial, Deep, Organ/Space	Was SSI reported to NHSN? Yes Indicate: NHSN Event #	SSI was **Reported Correctly** (SSI met criteria & reported to NHSN) √	If NO SSI reported, complete this section: Event **did not meet NHSN criteria**: √	SSI was **MISSED** (SSI met criteria & should have been reported) √ Reason?	BMI: BMI as reported to NHSN (to the nearest tenth XX.X)	BMI: BMI from validation medical record review (to the nearest tenth XX.X)	BMI: BMI **agree** (Discrepancy < 1.0 unit)	Diabetes: Diabetes as reported to NHSN	Diabetes: Diabetes from validation medical record review	Diabetes: Diabetes **agree**
CSEC 1				☐	☐	☐	☐	☐	☐			☐			☐
CSEC 2				☐	☐	☐	☐	☐	☐			☐			☐
CSEC 3				☐	☐	☐	☐	☐	☐			☐			☐
CSEC 4				☐	☐	☐	☐	☐	☐			☐			☐
CSEC 5				☐	☐	☐	☐	☐	☐			☐			☐
CSEC 6				☐	☐	☐	☐	☐	☐			☐			☐
CSEC 7				☐	☐	☐	☐	☐	☐			☐			☐
CSEC 8				☐	☐	☐	☐	☐	☐			☐			☐
CSEC 9				☐	☐	☐	☐	☐	☐			☐			☐
CSEC 10				☐	☐	☐	☐	☐	☐			☐			☐
						CSEC Total:	A:	B:	C:		D:			E:	

Hip Prosthesis SSI Validation - Form 4

When review is complete, please make all necessary corrections to your data in NHSN

ICD Flag List No.	Date of Surgery (MM//DD)	Discharge date of index surgery (MM/DD)	Indicate which post-op ICD code(s) "flagged" this patient record	re-admitted within NHSN specified number of days of index surgery	Was NHSN SSI criteria met? Yes Indicate: Superficial, Deep, Organ/Space	Was SSI reported to NHSN? Yes Indicate: NHSN Event #	SSI was **Reported Correctly** (SSI met criteria & reported to NHSN) √	If NO SSI reported, complete this section: Event **did not meet NHSN criteria**: √	SSI was **MISSED** (SSI met criteria & should have been reported) √ Reason?	Surgical Duration: Duration as reported to NHSN	Surgical Duration: Duration from validation medical record review	Surgical Duration: Durations **agree** (Discrepancy < 10 min.)	Diabetes: Diabetes as reported to NHSN	Diabetes: Diabetes from validation medical record review	Diabetes: Diabetes **agree**
HPRO 1				☐	☐	☐	☐	☐	☐			☐			☐
HPRO 2				☐	☐	☐	☐	☐	☐			☐			☐
HPRO 3				☐	☐	☐	☐	☐	☐			☐			☐
HPRO 4				☐	☐	☐	☐	☐	☐			☐			☐
HPRO 5				☐	☐	☐	☐	☐	☐			☐			☐
HPRO 6				☐	☐	☐	☐	☐	☐			☐			☐
HPRO 7				☐	☐	☐	☐	☐	☐			☐			☐
HPRO 8				☐	☐	☐	☐	☐	☐			☐			☐
HPRO 9				☐	☐	☐	☐	☐	☐			☐			☐
HPRO 10				☐	☐	☐	☐	☐	☐			☐			☐
						HPRO Total:	A:	B:	C:		D:			E:	

OPTIONAL

Denominator Data Supplemental Validation Form

When review is complete, please make all necessary corrections to your data in NHSN

If you have validated less than 20 total records, or if you desire, complete this **optional** validation form.

Instructions

1. Use the lists of procedures produced in STEP 1 of "Preparing for Validation.
2. Randomly select up to 10 procedures.
3. Look up and record all four denominator data elements as reported to NHSN.
4. Look up and record corresponding data from medical records.
5. Indicate where data agree.
6. Total the number of validated procedures and the number that agree for each data element.
7. Report totals in "Review of Findings."

Procedure Type/No.	Surgical Duration			Wound class			BMI			Diabetes		
	Duration as reported to NHSN	Duration from validation medical record review	Durations **agree** (Discrepancy < 10 min.)	Wound class as reported to NHSN	Wound class from validation medical record review	Wound classes **agree**	BMI as reported to NHSN	BMI from validation medical record review	BMI **agree** (Discrepancy <1.0 BMI unit)	Diabetes as reported to NHSN	Diabetes from validation medical record review	Diabetes **agree**
1			☐			☐			☐			☐
2			☐			☐			☐			☐
3			☐			☐			☐			☐
4			☐			☐			☐			☐
5			☐			☐			☐			☐
6			☐			☐			☐			☐
7			☐			☐			☐			☐
8			☐			☐			☐			☐
9			☐			☐			☐			☐
10			☐			☐			☐			☐
Total:	N:	D:		E:			D:			E:		

2015 SSI Validation - Review of Findings
Page 1 of 2

Review of validation process
Fill in table with data recorded in STEP 2 of "Performing Validation" (page 8).
Do not include procedures from the optional validation form here.

Procedure	Total no. of procedures in first two quarters of 2015	No. of procedures identified through ICD "flag" codes	No. of procedures reviewed during validation
COLO			
HYST			
CSEC			
HPRO			

Review of SSI case-finding
Fill in table using totals from forms 1-4. (To avoid confusion; work across, one form at a time.)
In the bottom row, total the numbers for all four procedures in columns A, B and C.
Calculate case-finding percentages with the formulas given. Round to nearest whole number.

Procedure type	No. of SSIs REPORTED CORRECTLY to NHSN prior to validation A	No. where NO SSI reported & event did NOT meet NHSN criteria B	No. of MISSED SSIs identified during validation C	Total SSIs reviewed during validation that meet NHSN criteria Sum: A+C = T	**Case-finding Percentage ("Sensitivity")** (A/T) x 100%
Example:	3 A	5 B	1 C	3+1 = 4 T	3/4 x 100% = 75%
COLO (Form 1)	A	B	C	T	
HYST (Form 2)	A	B	C	T	
CSEC (Form 3)	A	B	C	T	
HPRO (Form 4)	A	B	C	T	
Total	A	B	C	T	

Note: If no procedures meet SSI criteria (A+C = 0), Case-finding Percentage is not applicable. Simply indicate "N/A" in this field.

Save this form; results will be submitted to the CDPH HAI Program via an online form.

2015 SSI Validation – Review of Findings
Page 2 of 2

Review of surgical denominator data elements
Report the number of procedures reviewed during validation (N) for each procedure type. This should match the number provided in the "Review of Validation Process" table on page 14. Use the totals from Forms 1-4, as well as the Optional Form (if applicable) to fill in the indicated cells (marked D & E). Cells marked N/A are not applicable; write nothing in these. Calculate the percentage of surgical procedures with accurately reported denominator data using formulas below.

		Duration		**Wound class**		**BMI**		**Diabetes**	
Procedure	No. of procedures reviewed during validation N	No. where durations agree (Discrepancy <10 min.) D	**Percent with accurate duration** D/N x 100%	No. where wound class agree E	**Percent with accurate wound class** E/N x 100%	No. where BMI agree (Discrepancy <1 unit) D	**Percent with accurate BMI** D/N x 100%	No. where diabetes agree E	**Percent with accurate diabetes** E/N x 100%
Example:	9 N	7 D	7/9 x 100% = 78%	8 E	8/9 x 100% = 89%	N/A	N/A	N/A	N/A
COLO (Form 1)	N	D		E		N/A	N/A	N/A	N/A
HYST (Form 2)	N	N/A	N/A	N/A	N/A	D		N/A	N/A
CSEC (Form 3)	N	N/A	N/A	N/A	N/A	D		E	
HPRO (Form 4)	N	D		N/A	N/A	N/A	N/A	E	
Optional Form	N	D		E		D		E	

Save this form; results will be submitted to the CDPH HAI Program via an online form

Next Steps to Complete 2015 Validation

- **For SSI Case-finding**:
  - Enter missed SSI into NHSN.
  - Incorporate the use of diagnosis flag codes into routine surveillance practices.
  - If your hospital did not achieve 100% case-finding for a particular procedure type, evaluate your surveillance processes.
  - Review any remaining flagged procedures for SSI.
  - Repeat process for 2015 quarters 3 and 4.

- **For Denominator Data**:
  - Make corrections to procedure denominator records in NHSN.
  - If the hospital did not achieve 100% accuracy for a particular denominator data element, investigate the source of error.
  - Review additional procedures using the optional Denominator Data Supplemental Validation form.
  - Adjust surveillance practices to eliminate denominator data errors.

Appendix A: NHSN-defined ICD-10 Surgical Procedure Codes

COLO	HYST	CSEC	HPRO
0D1907L, 0D190JL, 0D190KL, 0D190ZL, 0D1947L, 0D194JL, 0D194KL, 0D194ZL, 0D1987L, 0D198JL, 0D198KL, 0D198ZL, 0D1A07H, 0D1A07K, 0D1A07L, 0D1A07M, 0D1A07N, 0D1A07P, 0D1A07Q, 0D1A0JH, 0D1A0JK, 0D1A0JL, 0D1A0JM, 0D1A0JN, 0D1A0JP, 0D1A0JQ, 0D1A0KH, 0D1A0KK, 0D1A0KL, 0D1A0KM, 0D1A0KN, 0D1A0KP, 0D1A0ZH, 0D1A0ZK, 0D1A0ZL, 0D1A0ZM, 0D1A0ZN, 0D1A0ZP, 0D1A0ZQ, 0D1A47H, 0D1A47K, 0D1A47L, 0D1A47M, 0D1A47N, 0D1A47P, 0D1A47Q, 0D1A4JH, 0D1A4JK, 0D1A4JL, 0D1A4JM, 0D1A4JN, 0D1A4JP, 0D1A4JQ, 0D1A4KH, 0D1A4KK, 0D1A4KL, 0D1A4KM, 0D1A4KN, 0D1A4KP, 0D1A4KQ, 0D1A4ZH, 0D1A4ZK, 0D1A4ZL, 0D1A4ZM, 0D1A4ZN, 0D1A4ZP, 0D1A4ZQ, 0D1A87H, 0D1A87K, 0D1A87L, 0D1A87M, 0D1A87N, 0D1A87P, 0D1A87Q, 0D1A8JH, 0D1A8JK, 0D1A8JL, 0D1A8JM, 0D1A8JN, 0D1A8JP, 0D1A8JQ, 0D1A8KH, 0D1A8KK, 0D1A8KL, 0D1A8KM, 0D1A8KN, 0D1A8KP, 0D1A8KQ, 0D1A8ZK, 0D1A8ZL, 0D1A8ZM, 0D1A8ZN, 0D1A8ZP, 0D1A8ZQ, 0D1B07H, 0D1B07K, 0D1B07L, 0D1B07M, 0D1B07N, 0D1B07P, 0D1B07Q, 0D1B0JH, 0D1B0JK, 0D1B0JL, 0D1B0JM, 0D1B0JN, 0D1B0JP, 0D1B0JQ, 0D1B0KH, 0D1B0KK, 0D1B0KL, 0D1B0KM, 0D1B0KN, 0D1B0KP, 0D1B0KQ, 0D1B0ZH, 0D1B0ZK, 0D1B0ZL, 0D1B0ZM, 0D1B0ZN, 0D1B0ZP, 0D1B0ZQ, 0D1B47H, 0D1B47K, 0D1B47L, 0D1B47M, 0D1B47N, 0D1B47P, 0D1B47Q, 0D1B4JH, 0D1B4JK, 0D1B4JL, 0D1B4JM, 0D1B4JN, 0D1B4JP, 0D1B4JQ, 0D1B4KH, 0D1B4KK, 0D1B4KL, 0D1B4KM, 0D1B4KN, 0D1B4KP, 0D1B4KQ, 0D1B4ZH, 0D1B4ZK, 0D1B4ZL, 0D1B4ZM, 0D1B4ZN, 0D1B4ZP, 0D1B4ZQ, 0D1B87H, 0D1B87K, 0D1B87L, 0D1B87M, 0D1B87N, 0D1B87P, 0D1B87Q, 0D1B8JH, 0D1B8JK, 0D1B8JL, 0D1B8JM, 0D1B8JN, 0D1B8JP, 0D1B8JQ, 0D1B8KH, 0D1B8KK, 0D1B8KL, 0D1B8KM, 0D1B8KN, 0D1B8KP, 0D1B8KQ, 0D1B8ZK, 0D1B8ZL, 0D1B8ZM, 0D1B8ZN, 0D1B8ZP, 0D1B8ZQ, 0D1H074, 0D1H0J4, 0D1H0K4, 0D1H0Z4, 0D1H474, 0D1H4J4, 0D1H4K4, 0D1H4Z4, 0D1H874, 0D1H87P, 0D1H8J4, 0D1H8JP, 0D1H8K4, 0D1H8KP, 0D1H8Z4, 0D1H8ZP, 0D1K074, 0D1K0J4, 0D1K0K4, 0D1K0Z4, 0D1K474, 0D1K4J4, 0D1K4K4, 0D1K4Z4, 0D1K874, 0D1K8J4, 0D1K8K4, 0D1K8Z4, 0D1L074, 0D1L0J4, 0D1L0K4, 0D1L0Z4, 0D1L474, 0D1L4J4, 0D1L4K4, 0D1L4Z4, 0D1L874, 0D1L8J4, 0D1L8K4, 0D1L8Z4, 0D1M074, 0D1M0J4, 0D1M0K4, 0D1M0Z4, 0D1M474, 0D1M4J4, 0D1M4K4, 0D1M4Z4, 0D1M874, 0D1M8J4, 0D1M8K4, 0D1M8Z4, 0D1N074, 0D1N0J4, 0D1N0K4, 0D1N0Z4, 0D1N474, 0D1N4J4, 0D1N4K4, 0D1N4Z4, 0D1N874, 0D1N8J4, 0D1N8K4, 0D1N8Z4, 0D5E0ZZ, 0D5E7ZZ, 0D5F0ZZ, 0D5F7ZZ, 0D5G0ZZ, 0D5G7ZZ, 0D5H0ZZ, 0D5H7ZZ, 0D5K0ZZ, 0D5K7ZZ, 0D5L0ZZ, 0D5L7ZZ, 0D5M0ZZ, 0D5M7ZZ, 0D5N0ZZ, 0D5N7ZZ, 0D9E00Z, 0D9E0ZX, 0D9E0ZZ, 0D9E40Z, 0D9E4ZX, 0D9E4ZZ, 0D9E7ZZ, 0D9E8ZZ, 0D9F0ZX, 0D9F8ZZ, 0D9G0ZX, 0D9G8ZZ, 0D9H0ZX, 0D9H4ZX, 0D9H8ZZ, 0D9K0ZX, 0D9K8ZZ, 0D9L0ZX, 0D9L8ZZ, 0D9M0ZX, 0D9M8ZZ, 0D9N0ZX, 0D9N8ZZ, 0DBE0ZX, 0DBE0ZZ, 0DBE4ZX, 0DBE4ZZ, 0DBE7ZX, 0DBE7ZZ, 0DBE8ZX, 0DBE8ZZ, 0DBF0ZX, 0DBF0ZZ, 0DBF4ZZ, 0DBF7ZZ, 0DBF8ZZ, 0DBG0ZX, 0DBG0ZZ, 0DBG4ZZ, 0DBG7ZZ, 0DBG8ZZ, 0DBH0ZX, 0DBH0ZZ, 0DBH4ZX, 0DBH4ZZ, 0DBH7ZX, 0DBH7ZZ, 0DBH8ZX, 0DBH8ZZ, 0DBK0ZX, 0DBK0ZZ, 0DBK4ZZ, 0DBK7ZZ, 0DBK8ZZ, 0DBL0ZX, 0DBL0ZZ, 0DBL4ZZ, 0DBL7ZZ, 0DBL8ZZ, 0DBM0ZX, 0DBM0ZZ, 0DBM4ZZ, 0DBM7ZZ, 0DBM8ZZ, 0DBN0ZX, 0DBN0ZZ, 0DBN4ZX, 0DBN4ZZ, 0DBN7ZX, 0DBN7ZZ, 0DBN8ZX, 0DBN8ZZ, 0DCE0ZZ, 0DCE4ZZ, 0DCF0ZZ, 0DCF4ZZ, 0DCG0ZZ, 0DCG4ZZ, 0DCH0ZZ, 0DCH4ZZ, 0DCK0ZZ, 0DCK4ZZ, 0DCL0ZZ, 0DCL4ZZ, 0DCM0ZZ, 0DCM4ZZ, 0DCN0ZZ, 0DCN4ZZ, 0DPD00Z, 0DPD02Z, 0DPD03Z, 0DPD07Z, 0DPD0CZ, 0DPD0DZ, 0DPD0JZ, 0DPD0KZ, 0DPD0UZ, 0DPD40Z, 0DPD42Z, 0DPD43Z, 0DPD47Z, 0DPD4CZ, 0DPD4DZ, 0DPD4JZ, 0DPD4KZ, 0DPD4UZ, 0DPD70Z, 0DPD72Z, 0DPD73Z, 0DPD77Z, 0DPD7CZ, 0DPD7DZ, 0DPD7JZ, 0DPD7KZ, 0DPD7UZ, 0DPD80Z, 0DPD82Z, 0DPD83Z, 0DPD87Z, 0DPD8CZ, 0DPD8DZ, 0DPD8JZ, 0DPD8KZ, 0DPD8UZ, 0DQE0ZZ, 0DQE4ZZ, 0DQE7ZZ, 0DQE8ZZ, 0DQF0ZZ, 0DQF4ZZ, 0DQF7ZZ, 0DQF8ZZ, 0DQG0ZZ, 0DQG4ZZ, 0DQG7ZZ, 0DQG8ZZ, 0DQH0ZZ, 0DQH4ZZ, 0DQH7ZZ, 0DQH8ZZ, 0DQK0ZZ, 0DQK4ZZ, 0DQK7ZZ, 0DQK8ZZ, 0DQL0ZZ, 0DQL4ZZ, 0DQL7ZZ, 0DQL8ZZ, 0DQM0ZZ, 0DQM4ZZ, 0DQM7ZZ, 0DQM8ZZ, 0DQN0ZZ, 0DQN4ZZ, 0DQN7ZZ, 0DQN8ZZ, 0DTE0ZZ, 0DTE4ZZ, 0DTE7ZZ, 0DTE8ZZ, 0DTF0ZZ, 0DTF4ZZ, 0DTF7ZZ, 0DTF8ZZ, 0DTG0ZZ, 0DTG4ZZ, 0DTG7ZZ, 0DTG8ZZ, 0DTH0ZZ, 0DTH4ZZ, 0DTH7ZZ, 0DTH8ZZ, 0DTK0ZZ, 0DTK4ZZ, 0DTK7ZZ, 0DTK8ZZ, 0DTL0ZZ, 0DTL4ZZ, 0DTL7ZZ, 0DTL8ZZ, 0DTM0ZZ, 0DTM4ZZ, 0DTM7ZZ, 0DTM8ZZ, 0DTN0ZZ, 0DTN7ZZ, 0DTN8ZZ, 0DWD00Z, 0DWD02Z, 0DWD03Z, 0DWD07Z, 0DWD0CZ, 0DWD0DZ, 0DWD0JZ, 0DWD0KZ, 0DWD0UZ, 0DWD40Z, 0DWD42Z, 0DWD43Z, 0DWD47Z, 0DWD4CZ, 0DWD4DZ, 0DWD4JZ, 0DWD4KZ, 0DWD4UZ, 0DWD70Z, 0DWD72Z, 0DWD73Z, 0DWD77Z, 0DWD7CZ, 0DWD7DZ, 0DWD7JZ, 0DWD7KZ, 0DWD7UZ, 0DWD80Z, 0DWD82Z, 0DWD83Z, 0DWD87Z, 0DWD8CZ, 0DWD8DZ, 0DWD8JZ, 0DWD8KZ, 0DWD8UZ, 0DWE07Z, 0DWE0JZ, 0DWE0KZ, 0DWE47Z, 0DWE4JZ, 0DWE4KZ, 0DWE77Z, 0DWE7JZ, 0DWE7KZ, 0DWE87Z, 0DWE8JZ, 0DWE8KZ	0UB90ZZ, 0UT90ZZ, 0UT94ZZ	10A00ZZ, 10A04ZZ, 10D00Z0, 10D00Z1, 10D00Z2	0SR902Z, 0SR9019, 0SR901A, 0SR901Z, 0SR9029, 0SR902A, 0SR902Z, 0SR9039, 0SR903A, 0SR903Z, 0SR9049, 0SR904A, 0SR904Z, 0SR907Z, 0SR90J9, 0SR90JA, 0SR90JZ, 0SR90KZ, 0SRA009, 0SRA00A, 0SRA00Z, 0SRA019, 0SRA01A, 0SRA01Z, 0SRA039, 0SRA03A, 0SRA03Z, 0SRA07Z, 0SRA0J9, 0SRA0JA, 0SRA0JZ, 0SRA0KZ, 0SRB019, 0SRB01A, 0SRB01Z, 0SRB029, 0SRB02A, 0SRB02Z, 0SRB039, 0SRB03A, 0SRB03Z, 0SRB049, 0SRB04A, 0SRB07Z, 0SRB0J9, 0SRB0JA, 0SRB0JZ, 0SRB0KZ, 0SRE009, 0SRE00A, 0SRE00Z, 0SRE019, 0SRE01A, 0SRE01Z, 0SRE039, 0SRE03A, 0SRE03Z, 0SRE07Z, 0SRE0J9, 0SRE0JA, 0SRE0JZ, 0SRE0KZ, 0SRR019, 0SRR01A, 0SRR01Z, 0SRR039, 0SRR03A, 0SRR03Z, 0SRR07Z, 0SRR0J9, 0SRR0JA, 0SRR0JZ, 0SRR0KZ, 0SRS019, 0SRS01A, 0SRS01Z, 0SRS039, 0SRS03A, 0SRS03Z, 0SRS07Z, 0SRS0J9, 0SRS0JA, 0SRS0JZ, 0SRS0KZ, 0SU907Z, 0SU909Z, 0SU90BZ, 0SU90KZ, 0SUA09Z, 0SUA0BZ, 0SUB07Z, 0SUB09Z, 0SUB0BZ, 0SUB0KZ, 0SUE09Z, 0SUE0BZ, 0SUR09Z, 0SUR0BZ, 0SUS09Z, 0SUS0BZ, 0SW904Z, 0SW907Z, 0SW90JZ, 0SW90KZ, 0SW944Z, 0SW947Z, 0SW94JZ, 0SW94KZ, 0SWB04Z, 0SWB07Z, 0SWB0JZ, 0SWB0KZ, 0SWB44Z, 0SWB47Z, 0SWB4JZ, 0SWB4KZ

These ICD-10 codes are used to identify all COLO, HYST, CSEC and HPRO procedures in the validation period (Jan 1 – Jun 30, 2015) as described in "Preparing for Validation" STEP 1.

*Codes reflect the updated procedure codes published by NHSN on September 29, 2015.

Appendix B: ICD-10 Diagnosis "Flag" Codes by Surgery Type

Colon Surgery	Abdominal Hysterectomy	Cesarean Section	Hip Prosthesis
K63.0, K63.2, K65.0, K65.1, K68.19, K94.02, K94.12, L03.319, T81.31XA, T81.32XA, T81.4XXA, T81.83XA	K65.0, K65.1, L03.319, T81.31XA, T81.32XA, T81.4XXA	K65.0, K65.1, L03.319, T81.31XA, T81.32XA, T81.4XXA	T81.4XXA, T84.50XA, T84.60XA, T84.7XXA, T85.79XA

These ICD-10 codes are used to identify procedures for validation. Among patients who underwent COLO, HYST, CSEC and HPRO procedures during the validation period, the presence of one of these flag codes during any admission in the post-operative period (40 days for COLO, HYST & CSEC; 100 days for HPRO) indicates a relatively high likelihood of SSI. Patients identified with these flag codes should be selected for chart review. This process is described in "Preparing for Validation" STEP 2.

Appendix C: Denominator Data Element Definitions

This appendix contains explanations of the four denominator data elements being validated in 2015: duration, wound class, BMI and diabetes. Any text that appears in a box is a direct quote from Chapter 9 of the NHSN Patient Safety Component Manual. All other text is added by CDPH HAI Program staff for clarity.

Duration

The NHSN Patient Safety Component Manual definition for this element is:

> Duration of operative procedure: The interval in hours and minutes between the Procedure/Surgery Start Time, and the Procedure/Surgery Finish Time, as defined by the Association of Anesthesia Clinical Directors (AACD):
>
> - Procedure/Surgery Start Time (PST): Time when the procedure is begun (e.g., incision for a surgical procedure).
> - Procedure/Surgery Finish (PF): Time when all instrument and sponge counts are completed and verified as correct, all postoperative radiologic studies to be done in the OR are completed, all dressings and drains are secured, and the physicians/surgeons have completed all procedure-related activities on the patient.

For validation purposes, duration recorded in NHSN and duration determined from medical record review should match exactly or have less than 10 minutes discrepancy in order to report "durations agree." The 10 minute discrepancy criterion was chosen for its relevance in risk adjustment models.

Wound Class

The NHSN Patient Safety Component Manual definition for this element is:

Wound class: An assessment of the degree of contamination of a surgical wound at the time of the operation. Wound class should be assigned by a person involved in the surgical procedure (e.g., surgeon, circulating nurse, etc.). The wound class system used in NHSN is an adaptation of the American College of Surgeons wound classification schema.

There are a group of NHSN procedures that can never be coded as clean. NHSN reached the decision regarding which NHSN operative procedures can never be classified as clean based on feedback from external experts in the field of surgery.

The procedures that can never be entered as clean are: APPY, BILI, CHOL, COLO, REC, SB and VHYS. Therefore, for these procedures in the application clean is not an option on the drop down menu.

For all other procedures clean is available as a choice and if the surgical team deems the procedure to be clean it can be entered as such into the NHSN application. For example CSEC, HYST, or OVRY can be a clean wound class if documented as such. Wounds are divided into four classes:

1. **Clean**: An uninfected operative wound in which no inflammation is encountered and the respiratory, alimentary, genital, or uninfected urinary tracts are not entered. In addition, clean wounds are primarily closed and, if necessary, drained with closed drainage. Operative incisional wounds that follow nonpenetrating (blunt) trauma should be included in this category if they meet the criteria.

   Note: The clean wound classification level will not be available for denominator data entry for the following NHSN operative procedure categories: APPY, BILI, CHOL, COLO, REC, SB, and VHYS

2. **Clean-Contaminated**: Operative wounds in which the respiratory, alimentary, genital, or urinary tracts are entered under controlled conditions and without unusual contamination. Specifically, operations involving the biliary tract, appendix, vagina, and oropharynx are included in this category, provided no evidence of infection or major break in technique is encountered.

3. **Contaminated**: Open, fresh, accidental wounds. In addition, operations with major breaks in sterile technique (e.g., open cardiac massage) or gross spillage from the gastrointestinal tract, and incisions in which acute, nonpurulent inflammation is encountered including necrotic tissue without evidence of purulent drainage (e.g., dry gangrene) are included in this category.

4. **Dirty or Infected**: Includes old traumatic wounds with retained devitalized tissue and those that involve existing clinical infection or perforated viscera. This definition suggests that the organisms causing postoperative infection were present in the operative field before the operation.

For validation purposes, wound class recorded in NHSN and wound class determined from medical record review should match exactly in order to report “wound classes agree.”

Body Mass Index (BMI)

BMI is a data element calculated by NHSN using data entered in the height and weight field.

The NHSN Patient Safety Component Manual definitions for these elements are:

Height: The patient's most recent height documented in the medical record in feet (ft.) and inches (in), or meters (m). Weight: The patient's most recent weight documented in the medical record in pounds (lbs.) or kilograms (kg) prior to or otherwise closest to the procedure.

BMI may be automatically calculated in hospital electronic medical records or recorded directly by hospital staff. If the **most recent BMI** at the time of surgery is not available it may need to be calculated. Below are two options for calculating BMI:

1. **Use an online BMI calculator**:
   If you are at a computer with internet access the easiest option is to use the BMI calculator at:

   https://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmi-m.htm.

(Note: The metric BMI calculator asks for height in centimeters. If only meters are available, multiply by 100 to get centimeters.)

OR

2. **Calculate by hand:**

English Formula	Metric formula
BMI = $\left(\frac{weight(lb)}{height(in)^2}\right) x\ 703$ Example: Weight = 165 lbs Height = 5'7" (67") $\frac{165}{(67)^2} x\ 703 = 25.8$ Note: If height is given in feet and inches, multiply feet by 12 and add remaining inches.	BMI = $\frac{weight(kg)}{height(m)^2}$ Example: Weight = 74.8 kg Height = 170 cm (1.7 m) $\frac{74.8}{(1.70)^2} = 25.9$ Note: If height is only available in centimeters, divide height by 100 to get height in meters.

For validation purposes, BMI recorded in NHSN and BMI determined from medical record review should match exactly or have less than 1.0 BMI unit discrepancy in order to report "BMI agree." Less than 1.0 unit discrepancies are permitted as variations in calculations may result in slightly different BMIs.

Diabetes

The NHSN Patient Safety Component Manual definition for this element is:

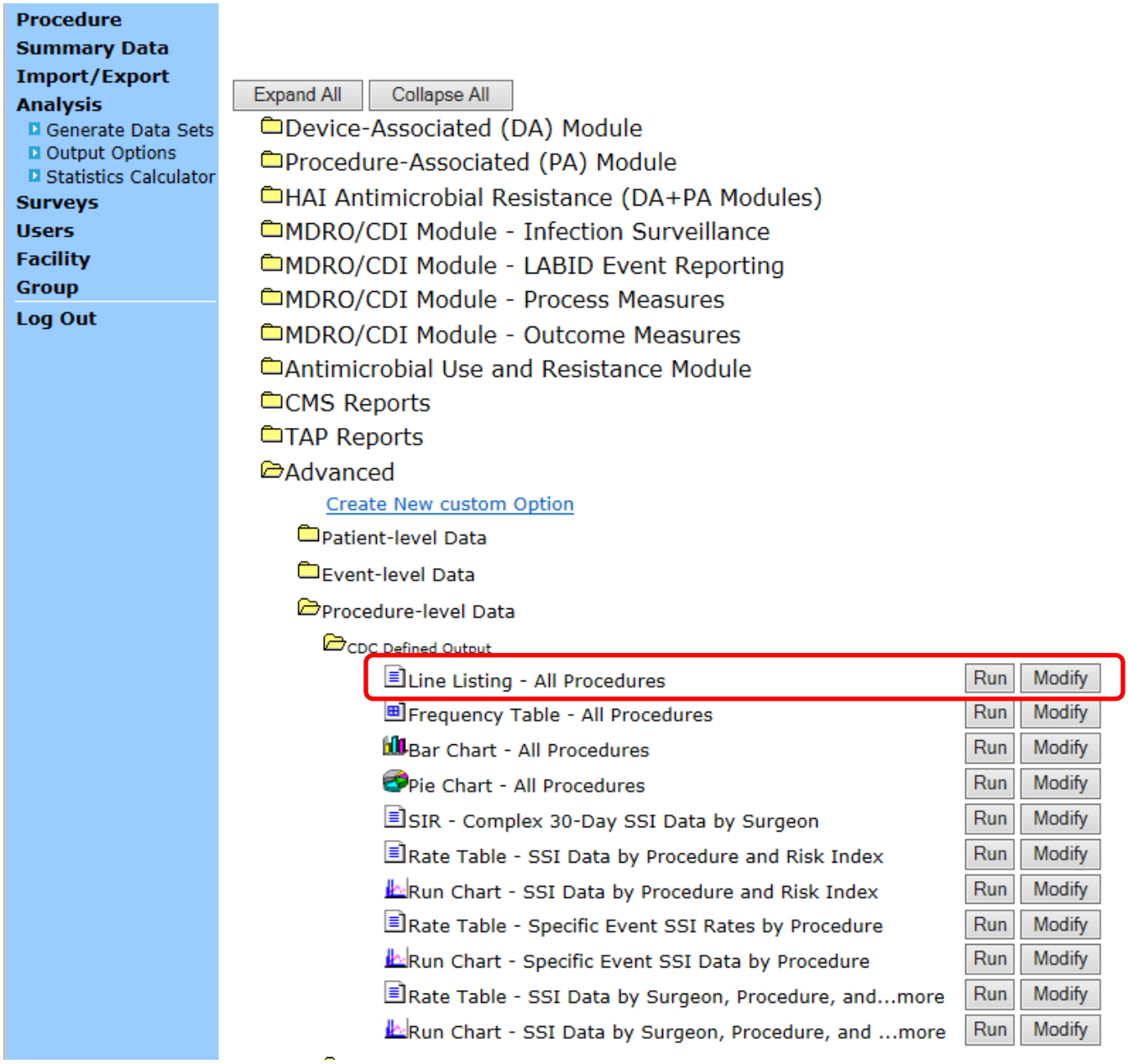
Diabetes: The NHSN SSI surveillance definition of diabetes indicates that the patient has a diagnosis of diabetes requiring management with insulin or a non-insulin anti-diabetic agent. This includes patients with “insulin resistance” who are on management with anti-diabetic agents. This also includes patients with a diagnosis of diabetes who are noncompliant with their diabetes medications. The discharge ICD-9-CM codes in the 250 to 250.93 range are also acceptable for use to answer YES to the diabetes field question.

The NHSN definition excludes patients with no diagnosis of diabetes. The definition excludes patients who receive insulin for perioperative control of hyperglycemia but have no diagnosis of diabetes.

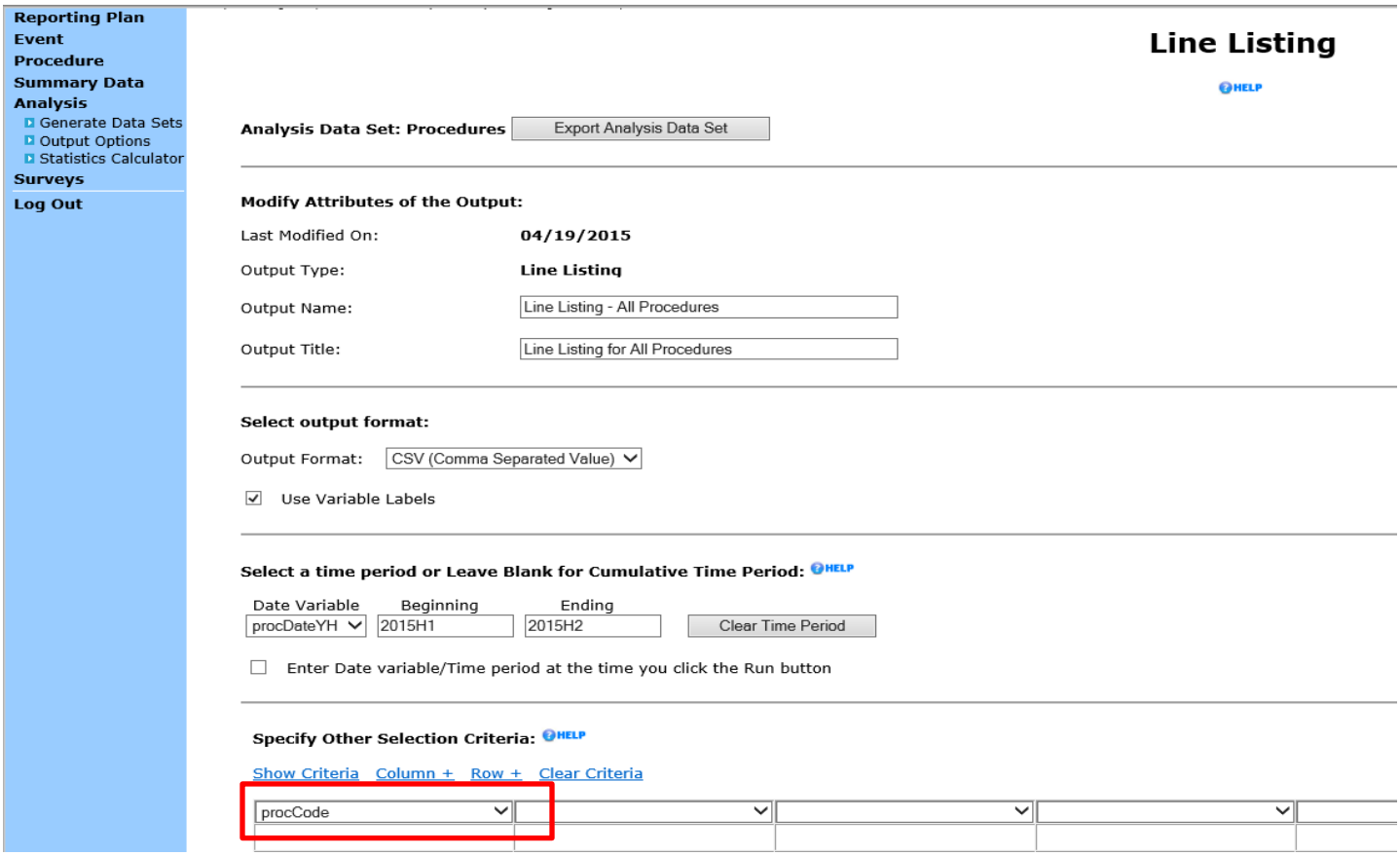
For validation purposes, diabetes recorded in NHSN and diabetes determined from medical record review should match exactly in order to report “diabetes agree.”

Appendix D: Generating NHSN Procedure Line Lists

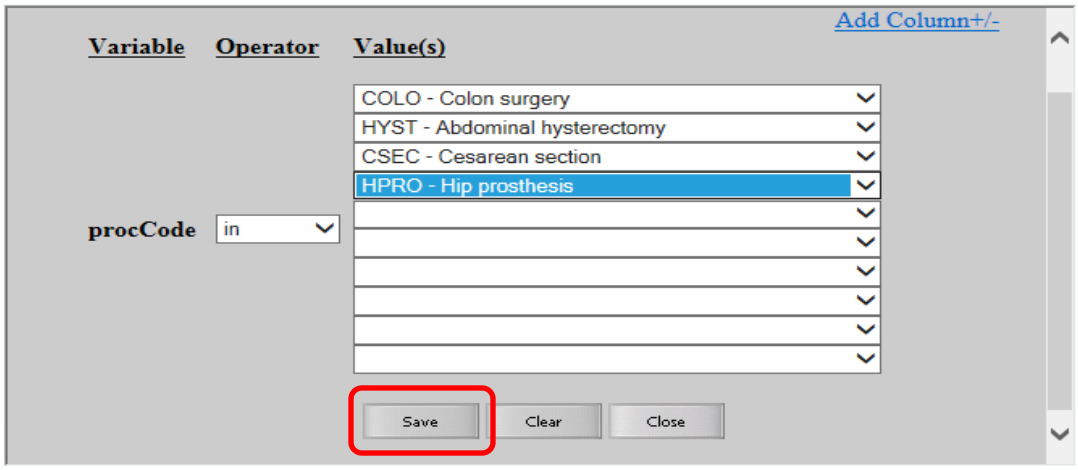
1) After logging in to NHSN, be sure you have generated a data set since your last data entry session. Click on Analysis→ Output Options→ Advanced→ Procedure level data→ CDC defined output→ Line Listing- All procedures →**Modify**



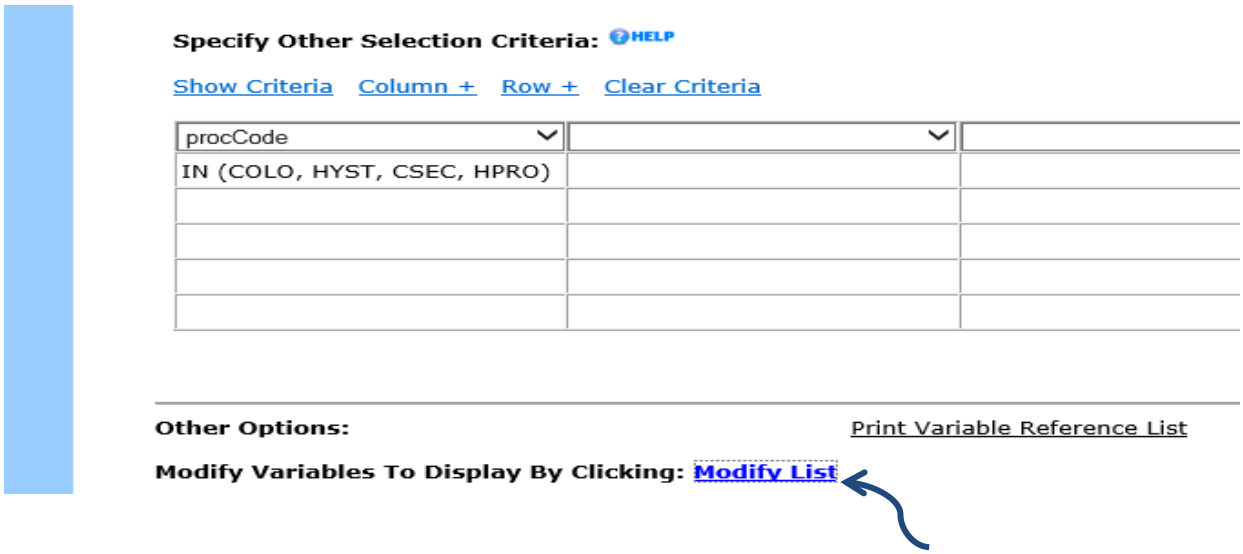
2) Select output format “CSV” – this makes saving to your home drive easier to work with your data later if you wish.
3) Check “Use Variable Labels”
4) Fill in date variable for first 2 quarters of 2015: ProcDateYH: Beginning 2015H1→Ending 2015H2
5) Specify Other Selection Criteria →Click on the top box and select procCode from the drop down box



6) Click on the box below “procCode”.
7) A grey box will pop up –for procedure code select “in” in the drop down box
8) Select COLO, HYST, CSEC, HPRO in one of each of the drop down boxes
9) Be sure to click **SAVE**

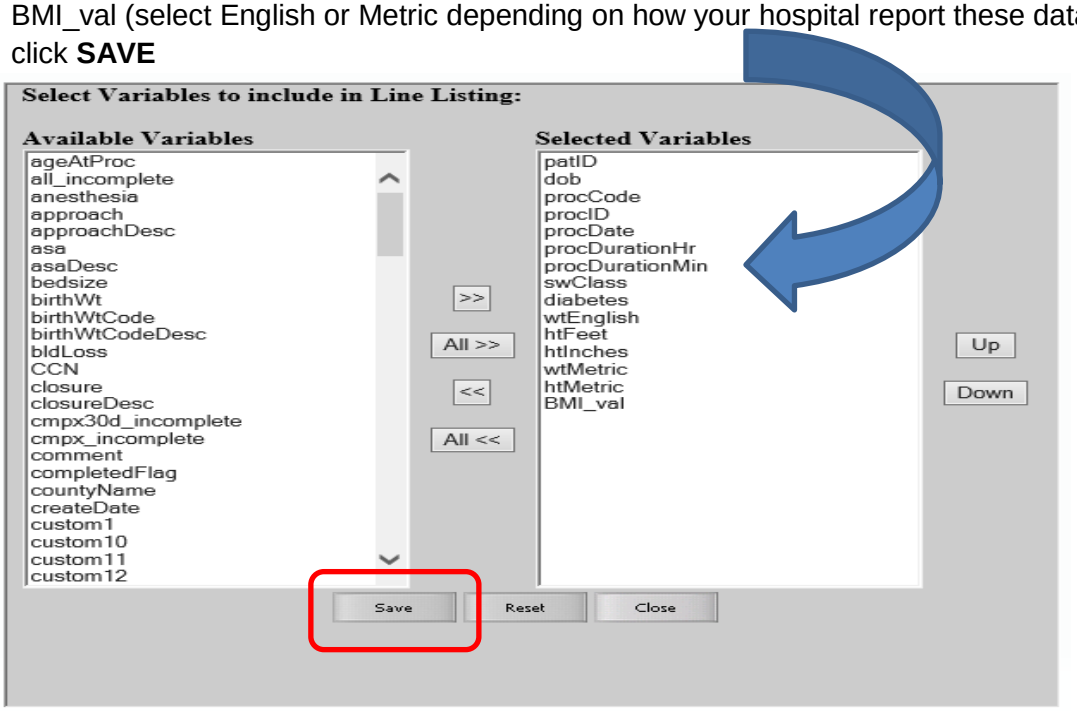


10) You will see your procedure types as in the table below



11) Click on : "**Modify Variables to Display by Clicking**: **Modify List**"

12) Select variables PatID, dob, procCode, procID, procdate, procDurationHR, procedDurationMin, swClass, diabetes, wtEnglish, htfeet, htinches, wtMetric, htMetric, BMI_val (select English or Metric depending on how your hospital report these data) - click **SAVE**



13) Click **RUN** – Your data will appear similar to the following chart. You are now ready to compare denominator data entered into NHSN to what is in the patient's medical record.

Patient ID	Date of Birth	Procedure Code	Procedure ID	Procedure Date	Duration ofProcedure - hr	Duration ofProcedure - min	Wound Class	Diabetes Mellitus	Patient Weight - lb	Patient Height - ft	Patient Height - in	Patient Weight - kg	Patient Height - meters	BMI_val
123	12/19/1953	COLO	13422005	1/5/2015	1	53	CC	N	132.28	5	7	60	1.71	20.51913
124	1/11/1946	COLO	13422006	1/8/2015	3	24	CC	N	180.34	5	4	81.8	1.63	30.78776
125	4/3/1933	COLO	13422007	1/29/2015	3	17	CC	N	116.23	5	2	52.72	1.6	20.59375
126	6/19/1962	COLO	13422008	2/27/2015	1	31	CC	N	144.29	5	6	65.45	1.7	22.64706
127	1/24/1942	COLO	13422009	3/3/2015	2	29	CC	N	194	5	1	88	1.57	35.70125
128	12/22/1967	COLO	13422010	5/18/2015	2	0	CO	N	210.32	5	4	95.4	1.63	35.90651
129	3/6/1930	COLO	13422011	5/30/2015	1	20	CO	N	135.58	0	5	61.5	0.13	3639.053
130	7/7/1937	COLO	13422012	6/17/2015	6	37	CC	N	130.07	5	8	59	1.75	19.26531
131	8/14/1999	COLO	13422013	6/25/2015	2	23	CO	N	126.54	5	1	57.4	1.56	23.58646
132	5/29/1968	COLO	13422014	6/26/2015	1	37	CC	N	110.23	4	11	50	1.52	21.64127
145	5/12/1985	CSEC	13422027	1/5/2015	0	34	CC	N	150.13	5	1	68.1	1.57	27.6279
146	12/10/1983	CSEC	13422028	2/8/2015	0	38	C	N	168.34	4	11	76.36	1.5	33.93778
148	11/20/1974	CSEC	13422030	3/2/2015	0	45	C	N	168.21	5	1	76.3	1.57	30.9546
149	6/20/1973	CSEC	13422031	3/10/2015	23	58	C	N	185.19	5	1	84	1.57	34.07846
161	9/20/1988	CSEC	13422043	4/4/2015	0	50	C	N	163.14	5	1	74	1.57	30.0215
162	8/28/1995	CSEC	13422044	4/17/2015	0	53	CC	N	176.37	5	4	80	1.63	30.11028
163	9/23/1988	CSEC	13422045	5/9/2015	0	45	CC	N	136.69	4	9	62	1.47	28.69175
164	8/10/1985	CSEC	13422046	5/31/2015	0	44	CC	N	180.34	5	4	81.8	1.65	30.04591
165	11/27/1978	CSEC	13422047	6/5/2015	0	38	CC	N	156.53	5	4	71	1.63	26.72287
166	4/24/1976	CSEC	13422048	6/10/2015	0	55	C	N	210.43	5	6	95.45	1.7	33.02768
167	10/18/1983	CSEC	13422049	6/14/2015	0	36	CC	N	255.54	5	8	115.91	1.75	37.84816
168	8/4/1982	CSEC	13422050	6/20/2015	23	55	C	N	182.98	5	1	83	1.55	34.54735
194	2/10/1949	HPRO	13422076	1/5/2015	1	23	C	N	195.42	5	8	88.64	1.73	29.61676
195	5/18/1944	HPRO	13422077	1/19/2015	1	3	C	N	170.35	5	4	77.27	1.63	29.08277
196	9/10/1956	HPRO	13422078	2/7/2015	1	28	C	N	218.26	6	2	99	1.88	28.01041
197	1/23/1962	HPRO	13422079	3/6/2015	1	15	C	N	138.23	5	4	62.7	1.63	23.59893
198	4/27/1948	HPRO	13422080	4/6/2015	1	50	C	N	140.2				1.55	26.48907
199	9/27/1956	HPRO	13422081	4/26/2015	1	0	C						1.7	30.67128
200	11/26/1932	HPRO	13422082	5/28/20									1.52	38.34834
201	9/25/1969	HPRO	13422083	6/12/20									1.93	34.16736
236	9/21/1975	HYST	13422118	1/6/20									1.65	26.44628
237	7/6/1939	HYST	13422119	2/2/201									.63	26.689
238	10/25/1962	HYST	13422120	3/13/201									1.57	25.23429
239	7/13/1961	HYST	13422121	3/15/201						5	3	84	1.61	32.40616
240	5/1/1970	HYST	13422122	4/27/201		27	CC	N	150.13	5	4	68.1	1.65	25.01377
241	9/14/1941	HYST	13422123	5/22/2015	5	45	CC	N	146.16	5	4	66.3	1.65	24.35262
242	12/22/1959	HYST	13422124	5/23/2015	1	57	CC	N	128.26	5	1	58.18	1.57	23.60339
243	1/26/1972	HYST	13422125	6/13/2015	1	55	CC	N	190.26	5	6	86.3	1.68	30.57681
244	2/16/1947	HYST	13422126	6/20/2015	1	41	CC	N	133.27	5	4	60.45	1.63	22.75208

SAMPLE LIST - Note some errors may be evident prior to chart review.