



How to Import Patient Safety Procedure Data

September 2013

Objectives

- ❑ **Describe the options for importing data into NHSN**
- ❑ **Review specifications for .csv file and steps for importing**
- ❑ **Discuss helpful tips for a successful import**
- ❑ **Illustrate the use of NHSN Analysis Output Options for data quality**

Options for Importing

- ❑ **Selected event and associated denominators can be imported using the Clinical Document Architecture (CDA) function; files created by an infection control software vendor.**
- ❑ **Import procedures and surgeons into NHSN using a comma delimited ASCII file created by the facility.**

The person importing these data must be a user of NHSN.

Import via CDA

- ❑ **Clinical Document Architecture (CDA) is a Health Level 7 (HL7) standard which provides framework for format of electronic documents. NHSN has been enabled to accept electronic infection reports, denominator data, and process of care data from commercial infection surveillance systems.**

To implement CDA for NHSN, facilities should contact their Infection Control Software vendor to inquire about the availability of generating CDA events records for importation into NHSN.

Import via CDA

- ❑ **Before using the NHSN Import Data function, CDA zip files must be generated that contain the event and/or denominator records to be imported.**
- ❑ **In most cases, this file can be generated using an Export function provided by the Infection Control software used at the facility.**
- ❑ **For details on generating the CDA zip files, facilities should consult with their Infection Control software vendor representative.**
- ❑ **More information is available at:**
<http://www.cdc.gov/nhsn/CDA/index.html>

Options for Importing

- ❑ Select event and associated denominators can be imported using the Clinical Document Architecture (CDA) function; files created by an infection control software vendor.
- ❑ **Import procedures and surgeons into NHSN using a comma delimited ASCII file (.txt or .csv) created by the facility.** *[will refer to this as the “.csv Import”]*


The person importing these data must be a user of NHSN.

Procedure Import via .csv

- ❑ **NHSN will allow importation of procedure data in an ASCII comma delimited .txt or .csv file format.**
- ❑ **Can be generated from different external sources, such as databases or hospital information systems.**
- ❑ **Will need assistance of OR and/or IT staff.**

Procedure Import via .csv

- ❑ Procedure data that are imported must follow the NHSN file specifications.
- ❑ Be sure to pay special attention to the notes!
 - Data in the import file must be in same order described in specifications document.



Importing Patient Safety Procedure Data

The NHSN will allow importation of procedure data in an ASCII comma delimited text file format. You can generate the import files from different external sources, such as databases or hospital information systems. The default import option allows the importation of procedures where the procedure date occurs in a month for which a Monthly Reporting Plan exists and the Plan specifies the procedure code in the import file record. If you wish to import records for procedures not in the Plan, you must specify which procedures to include.

Custom procedures can also be imported if they are first created on the custom options page.

NOTES:

1. Data in the import file must be in the same order as described in the table below, not as they appear on the Denominator for Procedure form.
2. The comma delimited text file format defined in the below table requires commas between fields even if no data values exist (e.g., optional or empty fields).
3. If a bilateral procedure is performed, two procedure records are required. Refer to the NHSN Procedure Codes table for a list of procedures that can be bilateral.
4. There should be a unique duration for each bilateral procedure. If only one total time is available for both procedures, estimate the duration for each or split the time evenly between them.
5. For procedures, if Outpatient = Y, then the procedure must be one of those listed in the NHSN Procedure Codes table as an Outpatient Procedure.
6. If you are importing Surgeon Code, all surgeon codes must exist in NHSN prior to importing.
7. If the optional Procedure Comment field has text that contains commas you must place a double quote at the beginning and end of the string of text (e.g., with allograft, dowels, plates).
8. When creating comma delimited files, be careful to exclude non-printable characters as they may actually cause the data to be improperly imported and result in errors.
9. You must delete the header line from the CSV file prior to importing the data.
10. Fields marked as "Optional for Import" allow an incomplete record to be imported. Note that these fields are considered required for completion of an in-plan procedure record and can be completed through manual edit of each record in the NHSN reporting application.

http://www.cdc.gov/nhsn/PDFs/ImportingProcedureData_current.pdf

Procedure Import via .csv

NHSN Procedure Import File Format**:

| Field | Required/ Optional | Values | Format |
|---------------------|--------------------|---|---------------------|
| Patient ID | Required | | Character Length 15 |
| Gender | Required | M- Male F - Female | Character Length 1 |
| Date of Birth | Required | | mm/dd/yyyy |
| NHSN Procedure Code | Required | See NHSN procedure codes | Character Length 5 |
| Date of Procedure | Required | | mm/dd/yyyy |
| Outpatient | Required | Y - Yes N - No Note: Some procedures may only be inpatient or outpatient. See NHSN procedure codes below. | Character Length 1 |
| Duration Hours | Required | | Numeric Length 2 |
| Duration Minutes | Required | | Numeric Length 2 |

- ❑ **Specifications for values, format, and data requirements must be followed!**
 - **Facilities cannot use their own format for wound class, ASA, etc.**

Procedure Import via .csv

- ❑ **Data Requirements assume in-plan reporting**
- ❑ **“Optional for Import”**
 - Required for a complete in-plan record.
 - Think of the import file specifications as a **companion to**, and not in place of, the full requirements for procedures as described in the Tables of Instructions.
 - Some fields are marked as “optional for import” as they were considered unobtainable through OR systems.
 - In-plan records missing these values would be included on the “Incomplete” Procedure list after data are imported.

Procedure Import via .csv

- ❑ **Custom fields and surgeons codes must be set-up in NHSN prior to importing these optional data.**
 - Remember: custom fields are set up per NHSN operative procedure category!
- ❑ **Data in the import file must be in same order described in specifications document.**
 - Includes leaving empty placeholders for optional fields that are not imported
 - Differs from order appearing on “Denominator for Procedure” form
 - Many errors during import are the result of these fields being out of order

Procedure Import via .csv

CDC Department of Health and Human Services
Centers for Disease Control and Prevention

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Logged into DHQP MEMORIAL HOSPITAL (ID 10018) as MAGGIE.
Facility DHQP MEMORIAL HOSPITAL (ID 10018) is following the PS component.

Import/Export Data

Import/Export Type:

- Import Patients
- Import Surgeons
- Import Procedures (comma delimited)
- Import BSI events, Procedures, BSI Summary Data (CDA)
- Import SSI events (CDA)
- Export Data

Select Import file:

- ❑ Click "Browse" to search for and select the file to import. Once the file has been selected, click "Submit."
- ❑ As the file is being submitted, a progress bar will appear; depending on the size of the file, it may take a few moments for the entire file to be submitted.

Procedure Import via .csv

- ❑ **Once the entire file has been submitted, the Procedure Import screen will appear. The Procedure Import screen may have up to 5 tabs of procedure data:**
 - Inserts
 - Bad Data
 - Updates
 - Multiple Records
 - Duplicate Data

Procedure Import via .csv

- ❑ **Inserts:** This tab includes all procedure records that have passed the quality acceptance checks. These records can be imported without any additional editing.

| Inserts Duplicate Data Bad Data | | | | | | | | | | | | | |
|--|----------------------|---------|--------|------------|----------|------------|------------|----------------|-----------------|---------|-----|-----------|---------|
| Delete | | patid | gender | dob | proccode | procdate | outpatient | procdurationhr | procdurationmin | swclass | asa | endoscope | surgeon |
| <input type="checkbox"/> | Edit | MD-5002 | F | 03/25/1962 | KPRO | 01/12/2009 | Y | 1 | 25 | C | 1 | N | |
| <input type="checkbox"/> | Edit | MD-5002 | F | 03/25/1962 | KPRO | 01/12/2009 | Y | 1 | 25 | C | 1 | N | |
| <input type="checkbox"/> | Edit | MD-5004 | F | 09/02/1976 | CSEC | 01/13/2009 | N | | 35 | C | 1 | N | |
| <input type="checkbox"/> | Edit | MD-5005 | F | 04/29/1974 | CSEC | 01/13/2009 | N | | 53 | C | 1 | N | |
| <input type="checkbox"/> | Edit | MD-5006 | F | 08/24/1982 | CSEC | 01/14/2009 | N | | 44 | C | 1 | N | |
| <input type="checkbox"/> | Edit | MD-5008 | M | 10/17/1963 | FUSN | 01/22/2009 | N | 2 | 12 | C | 1 | N | |
| <div><div>Update</div><div>Delete</div><div>Back</div></div> | | | | | | | | | | | | | |

NOTE: All other tabs must be resolved before any data can be imported.

Procedure Import via .csv

- ❑ **Duplicate Data:** The tab lists all procedure records in the import file that are considered duplicates. **NOTE:** You must either select one of the duplicate records, or delete both records from the import file before proceeding. If you select one of the duplicate records, as shown below, click "Transfer selected duplicate records for import."

Inserts **Duplicate Data** Bad Data

Transfer selected duplicate records for import

| Delete | patid | gender | dob | proccode | procdate | outpatient | procdurationhr | procdurationmin | swclass | asa | endoscope | surgeon |
|----------------------------------|---|--------|------------|----------|------------|------------|----------------|-----------------|---------|-----|-----------|---------|
| <input type="checkbox"/> | Select one of the following duplicate records | | | | | | | | | | | |
| <input checked="" type="radio"/> | MD-5009 | F | 01/22/1960 | CRAN | 01/25/2009 | N | 3 | 36 | C | 2 | N | |
| <input type="radio"/> | MD-5009 | F | 01/22/1960 | CRAN | 01/25/2009 | N | 3 | 36 | C | 2 | N | |

Update Delete Back

Procedure Import via .csv

- ❑ **Bad Data:** This tab lists all procedure records in the import file that cannot be imported for one or more reasons. Beneath each record, details are provided that will assist you in fixing each record. **NOTE:** Each record in the Bad Data tab must either be fixed (click "Edit") or deleted in order to import your file.

| Delete | | patid | gender | dob | proccode | procdate | outpatient | procdurationhr | procdurationmin | swclass | asa | endoscope | surgeon |
|--|----------------------|---------|--------|------------|----------|------------|------------|----------------|-----------------|---------|-----|-----------|---------|
| <input type="checkbox"/> | Edit | MD-5000 | M | 02/15/1944 | COLO | 01/12/2009 | N | 1 | 12 | CC | 6 | N | |
| (asa is not valid.) | | | | | | | | | | | | | |
| <input type="checkbox"/> | Edit | MD-5001 | M | 06/10/1952 | HYST | 01/12/2009 | Y | 2 | 3 | CC | 1 | N | |
| (Procedure code and patient gender is not valid.) | | | | | | | | | | | | | |
| <input type="checkbox"/> | Edit | MD-5003 | M | 07/11/1946 | COLO | 01/12/2009 | N | | 94 | CC | 2 | N | |
| (Procedure Duration (mins) is not in the range 0 through 59.) | | | | | | | | | | | | | |
| <input type="checkbox"/> | Edit | MD-5007 | F | 06/12/1952 | FUSN | 01/15/2009 | N | 3 | 16 | C | 2 | N | |
| (spinallevel is not valid.) | | | | | | | | | | | | | |

Procedure Import via .csv

- ❑ **Updates:** This tab lists all procedure records that already exist in the NHSN database, but have updates in one or more columns. You can either choose to delete the new record, or choose one or more columns to update, as shown below.

Updates

| Delete | | <input type="checkbox"/> patid | <input type="checkbox"/> gender | <input type="checkbox"/> dob | <input type="checkbox"/> proccode | <input type="checkbox"/> procdatetime | <input type="checkbox"/> outpatient | <input type="checkbox"/> procdurationhr | <input checked="" type="checkbox"/> procdurationmin | <input type="checkbox"/> swclass | <input checked="" type="checkbox"/> asa |
|--------------------------|----------------------|--------------------------------|---------------------------------|------------------------------|-----------------------------------|---------------------------------------|-------------------------------------|---|---|----------------------------------|---|
| <input type="checkbox"/> | Edit | MD-5000 | M | 02/15/1944 | COLO | 01/12/2009 | N | 1 | 23 | CC | 3 |
| Old data | | MD-5000 | M | 02/15/1944 | COLO | 01/12/2009 | N | 1 | 12 | CC | 3 |
| <input type="checkbox"/> | Edit | MD-5001 | F | 06/10/1952 | HYST | 01/12/2009 | Y | 2 | 3 | CC | 2 |
| Old data | | MD-5001 | F | 06/10/1952 | HYST | 01/12/2009 | Y | 2 | 3 | CC | 1 |

Procedure Import via .csv

- ❑ **Multiple Records:** This tab lists all procedure records that already exist in the NHSN database. In this tab, you must either select the existing record you wish to update (record will move to the Updates tab), or insert as a new record (record will move to Inserts tab).

| Multiple Records | | | | | | | | | | | | | |
|--------------------------|----------------------|--|---------|--------|------------|----------|------------|------------|----------------|-----------------|---------|-----|---------|
| Delete | | procid | patid | gender | dob | proccode | procdte | outpatient | procdurationhr | procdurationmin | swclass | asa | endosco |
| <input type="checkbox"/> | Edit | <input type="radio"/> Insert as new | 1234928 | F | 04/02/1959 | KPRO | 10/09/2008 | N | 3 | 14 | C | 2 | N |
| Existing data | | <input type="radio"/> 2674292 | 1234928 | F | 04/02/1959 | KPRO | 10/09/2008 | N | 3 | 14 | C | 2 | N |
| <input type="checkbox"/> | Edit | <input type="radio"/> Insert not allowed | 1234644 | F | 05/03/1949 | KPRO | 09/12/2008 | N | 1 | 26 | C | 2 | N |
| Existing data | | <input type="radio"/> 2674269 | 1234644 | F | 05/03/1949 | KPRO | 09/12/2008 | N | 1 | 26 | C | 2 | N |
| Existing data | | <input type="radio"/> 2674270 | 1234644 | F | 05/03/1949 | KPRO | 09/12/2008 | N | 1 | 26 | C | 2 | N |

Procedure Import via .csv

- Once all desired edits and deletions have been made, you should have only the Inserts and/or Updates tab(s). Click "Update". When all records have been imported, you will see a message confirming the data file has been successfully imported.

Inserts

| Delete | | patid | gender | dob | proccode | procdate | outpatient | procdurationhr | procdurationmin | swclass | asa | endoscope | surgeon |
|--------------------------|----------------------|---------|--------|------------|----------|------------|------------|----------------|-----------------|---------|-----|-----------|---------|
| <input type="checkbox"/> | Edit | MD-5000 | M | 02/15/1944 | COLO | 01/12/2009 | N | 1 | 12 | CC | 3 | N | |
| <input type="checkbox"/> | Edit | MD-5001 | F | 06/10/1952 | HYST | 01/12/2009 | Y | 2 | 3 | CC | 1 | N | |
| <input type="checkbox"/> | Edit | MD-5002 | F | 03/25/1962 | KPRO | 01/12/2009 | Y | 1 | 25 | C | 1 | N | |
| <input type="checkbox"/> | Edit | MD-5002 | F | 03/25/1962 | KPRO | 01/12/2009 | Y | 1 | 25 | C | 1 | N | |
| <input type="checkbox"/> | Edit | MD-5003 | M | 07/11/1946 | COLO | 01/12/2009 | N | 1 | 34 | CC | 2 | N | |
| <input type="checkbox"/> | Edit | MD-5004 | F | 09/02/1976 | CSEC | 01/13/2009 | N | | 35 | C | 1 | N | |
| <input type="checkbox"/> | Edit | MD-5005 | F | 04/29/1974 | CSEC | 01/13/2009 | N | | 53 | C | 1 | N | |
| <input type="checkbox"/> | Edit | MD-5006 | F | 08/24/1982 | CSEC | 01/14/2009 | N | | 44 | C | 1 | N | |
| <input type="checkbox"/> | Edit | MD-5008 | M | 10/17/1963 | FUSN | 01/22/2009 | N | 2 | 12 | C | 1 | N | |
| <input type="checkbox"/> | Edit | MD-5009 | F | 01/22/1960 | CRAN | 01/25/2009 | N | 3 | 36 | C | 2 | N | |

Update


Delete

Back

Troubleshooting

- ❑ **"Unable to extract the year from the procedure date".**
 - Make sure there are no extra or missing columns. This would cause all of the data to shift one column - which means NHSN would see an invalid value for procedure date.
 - Be sure that there is no header row or empty row in the import file.
 - Check all of the procedure dates to make sure they are in mm/dd/yyyy format. If only one procedure date is missing a / or includes a special character, it will throw off the entire import file.

Import/Export Data

 Unable to extract the year from the procedure date.

Import/Export Type:

Troubleshooting

❑ "Unable to read uploaded file..."

- Can be caused by invalid NHSN operative procedure code(s)
- Can be caused by trailing, special characters

Import/Export Data

❌ Unable to read uploaded file test_procs.txt. Invalid data file. Only ASCII comma delimited text files are supported.


Import/Export Type: ▼

Troubleshooting

❑ "Unable to import data"

- Can be caused by missing patient information, such as DOB or gender.

Import/Export Data

 Unable to import data.

Import/Export Type:

Helpful Tips

- ❑ **Facilities will be stopped if the data are not in correct order, or if they do not leave empty placeholders for optional fields.**

Helpful Tips

- ❑ **It's extremely important that the same definitions and protocols are followed - many times, the OR staff or IT staff are not aware of the standard CDC definitions for these data fields**
 - Requires teamwork at the facility – keep lines of communication open!
 - Data managers/IT staff/OR staff can email NHSN directly with questions.
 - Equally important for IP to understand data elements captured from OR/other systems

Helpful Tips

❑ Make sure the patient IDs are correct!

- If patient IDs have leading zeros, make sure these leading zeros are captured upon import
- May need to change format of this column to “text”, as opposed to “general” or “number”
- When entering subsequent SSIs, patient ID must match exactly

00-11-22-33 ≠ 00112233

00112233 ≠ 112233

MR112233 ≠ 112233

Helpful Tips

- ❑ **“Can I import a sample or test file??”**
 - NO!
 - ALL data would exist in the live, national database – therefore, only real data should be imported/tested
 - Removing test data can be a time-consuming task for facility users
 - NHSN team can help troubleshoot any errors/review files

Checking the Data

- ❑ **Imported data should be checked to insure accurate data have been collected**
- ❑ **Facility and Group users can utilize NHSN Analysis Output Options to accomplish this**
- ❑ **New variable has been added to analysis datasets**
 - Variable name = imported
 - Y/N values
 - Will not assign this value to older (pre-6.3) imported records

Checking the Data: Procedure Duration

- ❑ **Example:** You wish to check the procedure duration for all CBGB and CBGC procedures imported.
- ❑ **SOLUTION:** Run the “Line List – All Procedures” and **modify the following:**
 - Limit to imported = Y AND procCode IN (CBGB, CBGC)
 - Include only the necessary variables, (e.g., procID, procCode, procDate, procDurationHr, procDurationMin)
 - Sort by procDurationHr and procDurationMin
 - May make other modifications, as necessary
- ❑ *NOTE: Similar modifications can be made to check CSEC height/weight/duration of labor/blood loss*

Checking the Data: Procedure Duration

National Healthcare Safety Network

Line Listing for All Procedures

As of: September 22, 2010 at 2:58 PM

Date Range: All PROCEDURES

| Org ID | Patient ID | Date of Birth | Gender | Procedure ID | Procedure Date | Procedure Code | Duration of Procedure - hr | Duration of Procedure - min |
|--------|------------|---------------|--------|--------------|----------------|----------------|----------------------------|-----------------------------|
| 10018 | 829204 | 10/20/1925 | F | 21790 | 07/27/2009 | CBGB | 1 | 6 |
| 10018 | 250754 | 08/23/1941 | M | 21664 | 07/31/2009 | CBGB | 1 | 42 |
| 10018 | 789995 | 08/05/1925 | F | 21750 | 08/13/2009 | CBGB | 1 | 47 |
| 10018 | 814096 | 02/12/1931 | M | 21766 | 07/23/2009 | CBGB | 1 | 51 |
| 10018 | 838249 | 03/20/1930 | M | 21873 | 07/02/2009 | CBGB | 1 | 55 |
| 10018 | 838231 | | | | | | 2 | 0 |
| 10018 | 527318 | | | | | | 2 | 7 |
| 10018 | 836570 | | | | | | 2 | 12 |
| 10018 | 739259 | | | | | | 2 | 15 |
| 10018 | 744782 | | | | | | 2 | 15 |

Notice that all of the procedure durations are <3hours. This is an indication that an incorrect duration was imported for these procedures.

Checking the Data: ASA Score

- ❑ **Example:** You wish to check the ASA score imported for all CBGB and CBGC procedures
- ❑ **SOLUTION:** Run the “Frequency Table – All Procedures” and modify the following:
 - Limit to imported = Y and procCode IN (CBGB, CBGC)
 - Row = ASA
 - Column = procCode
 - May make other modifications, as necessary
- ❑ *NOTE: Similar modifications can be made to check other variables, such as Emergency, Wound Class, Trauma, etc.*

Checking the Data: ASA Score

National Healthcare Safety Network
Frequency Table for All Procedures
As of: September 22, 2010 at 3:15 PM
Date Range: All PROCEDURES

| Frequency Col Pct | Table of asa by proccode | | | |
|----------------------|--------------------------|-------------|-----------|-------|
| | asa | proccode | | Total |
| | | CBGB | CBGC | |
| | 2 | 1 1.75 | 0 0.00 | 1 |
| | 3 | 1 1.75 | 0 0.00 | 1 |
| | 4 | 26 42.61 | 1 1.67 | 27 |
| | 5 | 29 50.88 | 0 0.00 | 29 |
| | Total | 57 | 1 | 58 |

ASA Score of 5 =
Moribund patient who is
not expected to survive
for 24 hours with or
without the operation.

*It is unlikely that 50% of the
patients undergoing CBGB
would be classified as a 5.*

Checking the Data: Next Steps

- ❑ Discuss issues with OR staff, IT staff, and/or data manager**
- ❑ Determine source of data & source of problem**
- ❑ Do these results differ from manual entry of data? If so, why is there a difference?**
- ❑ Have default values been used in the absence of electronic capture of variables?**
- ❑ Perform data checks on a regular basis!**
 - Especially after any changes in source database(s) and/or NHSN protocol

Resources

❑ Template File

- Includes a header row as a guide – remember: header rows cannot be imported.

❑ “How To Import Procedure Data”

- Step-by-step instructions for importing a .csv file
- Available in NHSN Help

❑ Procedure Import File Specifications

- Available at:
http://www.cdc.gov/nhsn/PDFs/ImportingProcedureData_current.pdf

❑ SSI Data Collection Protocol and Forms

- Available at:
<http://www.cdc.gov/nhsn/acute-care-hospital/ssi/index.html>

QUESTIONS???

Contact us at:

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