

Load Guide: Downloading and Applying the Elixhauser Comorbidity Software for ICD-10-CM Tool

Overview of HCUP ICD-10-CM/PCS Tools

ICD-10-CM/PCS Tools can be used with data containing hospital discharges beginning October 1, 2015. HCUP Tools are updated periodically to accommodate new or revised ICD-10-CM/PCS codes and to add corrections or modifications based on new guidance for the use of ICD-10-CM/PCS codes. You are advised to apply the most recent version of the HCUP Tools for your data throughout your research process.

The information included in this document is specific to the Elixhauser Comorbidity Software for the ICD-10-CM. The “HCUP Tools Loading Tutorial,” part of the [HCUP On-line Tutorial Series](#), describes steps to apply the Clinical Classifications Software (CCS) to administrative data that are generally applicable to all HCUP Tools, including the Elixhauser Comorbidity Software. Specific guidance documents for each HCUP Tool are available on the HCUP-US Web site:¹

- Clinical Classifications Software (CCS): www.hcup-us.ahrq.gov/toolssoftware/ccs10/ccs10.jsp
- Chronic Condition Indicator (CCI): www.hcup-us.ahrq.gov/toolssoftware/chronic_icd10/chronic_icd10.jsp
- Elixhauser Comorbidity Software: www.hcup-us.ahrq.gov/toolssoftware/comorbidityicd10/comorbidity_icd10.jsp
- Procedure Classes: www.hcup-us.ahrq.gov/toolssoftware/procedureicd10/procedure_icd10.jsp
- Utilization Flags: www.hcup-us.ahrq.gov/toolssoftware/utilflagsicd10/utilflag_icd10.jsp

Timing and Versioning of Software Tool Releases

New or revised ICD-10-CM/PCS codes are released annually and valid for a Federal fiscal year, which runs from October 1 to September 30. Fiscal years are identified by the year the codes end. For example, FY2018 codes are valid from October 1, 2017 through September 30, 2018.

HCUP Tools are updated annually and released in October; however, the HCUP Tools are occasionally re-released during a Federal fiscal year to apply changes to the Tools’ assignments of specific ICD-10-CM/PCS codes. Thus, the HCUP ICD-10-CM/PCS Tools incorporate a versioning system that acknowledge both the Federal fiscal year and an incremented release number.

Version 2018.1 of the Elixhauser Comorbidity Software for the ICD-10-CM was released in October 2017. The codes contained in version 2018.1 are valid for use with data containing discharges from October 1, 2015 through September 30, 2018.

¹ The Surgery Flags software tool is currently available for use only with the ICD-9-CM and CPT codes through 2015. See www.hcup-us.ahrq.gov/toolssoftware/surgflags/surgeryflags.jsp.

Downloading and Installing Elixhauser Comorbidity Software for ICD-10-CM

The instructions below are specific to downloading and installing the Elixhauser Comorbidity Software for ICD-10-CM.

If you are downloading the Tool for the first time:

1. Navigate to [“Downloading Information for the Elixhauser Comorbidity Software for ICD-10-CM Tool”](#) on the [Beta Elixhauser Comorbidity Software for ICD-10-CM](#) Web page.
2. There are three files available for download:
 - Format Program: Creation of Format Library
 - Analysis Program: Creation of Elixhauser Comorbidity Variables
 - Table of Changes 2018.1 (for informational purposes)

Right-click on both the Format and Analysis programs and select “Open in new window (or new tab).” Copy and paste both programs into SAS (or other statistical software).

3. Modify and/or adapt the two programs depending on your statistical software program.
 - a. For all statistical programs, the following modifications are necessary.
 - i. In the Format Program, specify the output filenames. This program will define all ICD-10-CM codes and Medicare Severity-Diagnosis Related Groups (MS-DRGs) necessary for the comorbidity analysis.
 - ii. In the Analysis Program, specify the full paths for all input and output files, including the location of your database or directly inputting your dataset, the SAS data file name (i.e., ‘CORE’), and the number and names of variables in your dataset. Your input file should include ICD-10-CM codes and ICD-10-MS-DRGs. The analysis program will assign 0/1 indicators to the inpatient records for the comorbidity variables of interest.
 - b. If using an alternate statistical program, adapt the SAS files as appropriate to work with the formatting requirements of that program.
 - i. For SPSS: Use the SPSS Value Labels statement to apply the Elixhauser Comorbidity Software labels. If you have questions on how to apply the labels, contact SPSS directly for technical assistance.
 - ii. For Stata: Use the dictionary command to apply the Elixhauser Comorbidity Software labels. If you have questions on how to apply the labels, use the Stata “help” function for more instructions or contact Stata directly for technical assistance.
4. Run the two SAS (or other) Load Programs to apply the Elixhauser Comorbidity Software Tool to the discharge records in your dataset.
5. Verify that the Tool was loaded properly.
 - Confirm that the comorbidity variable is populated with numeric values.
 - Perform a random spot check on your dataset to confirm that the Elixhauser Comorbidity Software was coded correctly. For example, you can confirm that if a discharge record has two different diagnoses the comorbidity variable assigned was ‘1,’ and if a discharge record has one diagnosis (or a similar or related diagnosis) the comorbidity variable assigned was ‘0’.

If you have already downloaded the Tool and need to check for version updates:

1. Check if your existing Software version is the most recent version of the Tool by navigating to “[Downloading Information for the Elixhauser Comorbidity Software for ICD-10-CM Tool](#)” on the [Beta Elixhauser Comorbidity Software for ICD-10-CM](#) Web page.
2. The current version of the Elixhauser Comorbidity Software Tool is displayed on the Web page as “Version YYYY.N”. Because the Elixhauser Comorbidity Software for ICD-10-CM Tool is valid for all ICD-10-CM codes, it is recommended that the most up-to-date version always be applied to your data. Note that older (archived) versions are retained on this page for informational purposes only.
3. If you have not applied the most current version of the Tool, follow the steps in “*If you are downloading the Tool for the first time*” to download and apply the latest version to your data and ensure that the Tool was loaded properly.

Additional Information and Technical Support

For more information about the Elixhauser Comorbidity Software for ICD-10-CM and other HCUP Tools, visit the Tools section of the HCUP-US Web site: www.hcup-us.ahrq.gov/tools_software.jsp.

If you have questions about using the HCUP databases, software tools, supplemental files, and other products, or about data use restrictions and publishing with the data, please contact HCUP User Support:

- E-mail: hcup@ahrq.gov
- Phone: 866-290-HCUP (4287) (toll free)
- International users, please contact HCUP User Support by e-mail.