User Manual: TRAX for the RSR

Tool for Creating the Ryan White Services Report (RSR) and ADAP Data Report (ADR) Client-Level Data File

Health Resources and Services Administration
HIV/AIDS Bureau

TRAX for the RSR Download Website:

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While TRAX can be used for both the RSR and ADR, this user manual relates to TRAX for the RSR. Another manual is available for TRAX for the ADR.

Release History

Version	Date	Description		
5.11	October 2025	Updated CHEX to reflect 2025 validations		
		Removed gender field		
		Sex at birth replaces gender in the eUCI		
5.4.0	December 2024	Updated CHEX to reflect 2024 validations		
5.3.0	November	Updated CHEX		
	2023	Updated language and screenshots		
5.2.0	October 2022	Updated CHEX		
5.1.0	December	Updated language and screenshots Updated CHEX to reflect 2019 RSR data element changes and		
5.1.0	2020	validations		
	2020			
5.0.0	December	Discontinued the CHEX Validation file Removed the CHEX All version due to formatting issues		
5.0.0	2019	Removed the CHEX All version due to formatting issues		
5.0.0	September	Updated CHEX to reflect 2019 data element changes and		
	2019	validations		
3.1.1	November	Clarified that ClientIDs must be 10 characters or less		
	2018	Updated CHEX to reflect 2018 validations		
3.1	November	TRAX updated to reflect schema change		
	2017	Clarified creation of the encrypted Unique Client Identifier (eUCI)		
	\langle	given gender fields have changed in manual		
		Updated CHEX to reflect the 2017 validations		
3.0.0	February 2017	Corrected date formulas in CHEX		
3.0.0	December	Updated CHEX and added a description of the two versions of		
	2016	CHEX in the instructional manual. One is updated to reflect the		
		2016 validations; the other maintains the flags for missing data.		
3.0.0	March 2016	Added information on columns that must be deleted if .CSV files		
3.0.0	February 2016	are created from CHEX Corrected date formulas in CHEX		
3.0.0	October 2015	2015 validations added to CHEX		
2.0.0	February 2015			
		·		
		Correction made to the CHEX formula on first OAMC visit		

1.0 November		CHEX Excel template added to the support documents zip file
	2014	User Manual updated to include instructions for using CHEX to
		validate data
1.0	October 2014	TRAX for the RSR



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1.Introduction

The Ryan White Services Report (RSR) requires Ryan White recipients and/or providers to submit deidentified client-level demographic, service, and clinical data. You must upload the client-level data file to the RSR Web System in a specific XML (eXtensible Markup Language) format. XML is a simple and widely adopted method of formatting data that can be exchanged across different computer platforms, languages, and applications.

TRAX allows you to create this client-level data file. TRAX is an easy to install, self-updating application. You import your client-level data in a specific format into TRAX. You then use TRAX to convert that data into the compliant XML file.

Access TRAX and obtain samples of the input files here. This user manual describes in detail the following steps for using TRAX for the RSR:

- 1. Prepare your input files, including using CHEX to validate your data
- 2. Set up TRAX
- 3. Import data into TRAX
- 4. Create the client-level data file

The manual also presents information on dealing with client duplicates and common mistakes.

Another version of the manual is available for the ADR.

How Do I Validate My Data?

TRAX creates a file that is compliant with the XML schema. It does not contain queries or error messages related to service dates outside of the reporting period, data inconsistencies or missing data. However, there are two strategies you can use to validate your data:

- Once you create TRAX's input files, you can copy and paste the data into the CHEX Excel template. Through built-in data validations and conditional formatting, CHEX will help you identify data quality issues before you load data into TRAX.
- After you create your XML file through TRAX, use the Check Your XML
 Feature in the RSR Web System to check your data quality. You can run the
 Upload Completeness Report and the Validation Report on your test file.

2.Prepare Your Input Files

TRAX requires twelve .CSV files as input. The files and data elements within the files must have the correct names. In addition, you must use the values as required by the RSR. In this section, we discuss your process for creating these files.

What is .CSV?

If you are not familiar with .CSV, don't worry! You can create the files in Excel and then save them into .CSV files. Just select "Save As" and then pick the .CSV extension from the "Save as type" drop down menu.

a) Become Familiar with RSR Data Elements

First, you need a good understanding of the RSR's required data elements and where those data elements are located within your data management system(s).

Learn more about the RSR's required data elements by referring to the:

- **1. RSR Instruction Manual:** This document provides you with detailed information on data element definitions. You may not need to report all data elements for all clients. Check Appendix A of the manual to understand what data elements are required depending on the services the client received.
- **2.** RSR Data Dictionary and XML Schema Implementation Guide: This document provides you with detailed information on how to code the values for each RSR data element (e.g., 1= Hispanic/Latino).
- **3.** RSR Crosswalk: The TRAX support package has an RSR crosswalk, i.e., a table in which you list the variables and values in your data management system that correspond to RSR data elements. Using this crosswalk will help you: find the data you need to report; understand what you need to do to transform the data you have into the data you need to report; and identify any missing data that you'll need to start collecting.

b) Become Familiar with the Structure of the Input Files

Review the .CSV file structures so you know in what format to structure your client-level data. The zip file has sample files. The first file, *ClientReport*, captures all RSR data elements that just require one response per client; each row should correspond to one client. The subsequent files capture data elements that may have multiple responses per client; in these cases, multiple rows may correspond to one client.

One row per client

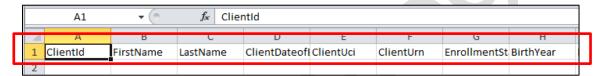
The files are the following:

- 1. ClientReport.csv
- 2. ClientReportAmbulatoryService.csv
- 3. ClientReportAsianSubgroup.csv
- 4. ClientReportCd4Test.csv
- 5. ClientReportHispanicSubgroup.csv
- ClientReportHivRiskFactor.csv
- **7.** ClientReportHealthCoverage.csv
- 8. ClientReportNhpiSubgroup.csv
- 9. ClientReportRace.csv
- **10.** ClientReportServiceDelivered.csv
- 11. ClientReportServiceVisits.csv
- 12. ClientReportViralLoadTest.csv

Can have multiple rows per client: In the example below, ClientID 29 has two rows, one for each risk factor ID.

A	Α	В	С
1	ClientId	HivRiskFactorId	
2	29	1	
3	29	2	
4	32	9	

Data elements appear in the first (header) row of the files. The example below shows some of the data elements in the *ClientReport* file.



c) Prepare Your Input Files

You must now extract data from your data management system(s) and structure the data in the right format. Remember that these data are very sensitive so you will want to treat them using the highest security standards!

- 1. Extract client-level data from your data management system(s). It is often easier getting data into your data management system than getting them out. Therefore, you may need to work with your IT staff to develop the reports you need.
- Create a spreadsheet for each of the twelve files listed above. The columns do not need to be in the same order,

Client ID

The files are linked by the Client ID, which could be a medical record number or a sequential number. It is the first column in every file. You must make sure that the same client has the same ID in each file. Only use numeric values (no letters or symbols). Client IDs cannot contain more than 10 characters.

but the column headers and files must have the correct names. The names must exactly match (no spaces, no capitalization) those in the .CSV file templates that are part of the download package. Manipulate your data so your values are equal to the values that TRAX is expecting – the accepted RSR values. **You will not be allowed to create an XML file with invalid data values**. The below table is an example of how your values for the race data element may differ from the expected RSR values.

Your System	RSR
White	1
Black	2
Asian	3
Hawaiian/Pacific Islander	4
Native American/Alaskan Native	5

Using this example, you would need to recode "White" to "1", "Black" to "2", etc. There are two approaches you can use to do this. First, you can use the "Replace All" function in Excel. For example, in the RacelD Excel table, you would replace "White" with "1". You can also use Excel formulas, such as "if/then" statements (e.g., if White, then 1).

In the zip file with the sample .CSV files, you'll also find identical files in Excel. These files have drop down menus with the RSR values to help you use the correct values.

3. Place all of your .CSV files in the same folder on a secure location on your computer. Name them correctly and close them! When you create the client-level data XML file, you will browse to and import this folder into TRAX. **Even if a certain file is not relevant to your agency, you still need to create it. It will just contain the header row; all other rows will be blank.**

d) <u>Tricky Data Elements</u>

Services

You report services in two files; there is one file for core and support services that include a count of visits (ClientReportServiceVisits) and one for core services that only include a "yes" indicator (ClientReportServiceDelivered). For each of these files, you report the ClientID and the ServiceID. You

report one row for every ClientID/ServiceID combination. You would only report more than one row per client if that client had more than one ServiceID.

For Local AIDS Pharmaceutical Assistance and Health Insurance Premium and Cost Sharing for Low-Income Individuals you report 2 in the DeliveredID column to indicate that the client received the service.

For **all other services**, report the number of visits in the reporting period. Note that there can be no more than one visit of a given type in one day, so the total number of visits should not exceed the number of days in the reporting period.

You do not report services that were not delivered.

	A	В	C		
1	ClientId	ServiceID	Delivered	dlp)
2	1	9		2	
3	11	9		2	
4	14	12		2	
5	15	9	\	2/	
			1		

	Α	В	C	
1	ClientId	ServiceID	Visits	_
2	1	8		(2)
3	2	18		3
4	11	8		1
5	11	18		4

Viral Load

Viral load values under a certain threshold are considered "undetectable." The threshold depends on the type of lab test you use. TRAX does not accept text or symbols (< or >) for viral load values. Therefore, for undetectable viral loads, you should input the lower bound of the test limit in the count field. For example, if the result is reported as <20, 20 is the lower bound and would be reported. Report 0 If the result is 'undetectable' and you do not know the lower bound.

ClientId	ServiceDate	Count	
96	8/13/2022	500000000	
165	9/14/2022	0	Z
214	10/22/2022	20	

Client's viral load is undetectable; Lower bound is unknown so 0 is reported

Client's viral load is undetectable; Lower bound of the test is 20 so 20 is reported

Client eUCI and URN

Every record in the client-level data XML file must be assigned an encrypted Unique Client Identifier (eUCI), which HAB uses to link records across providers. TRAX users do not have to take additional steps to create the eUCI. The input values are read from the *ClientReport* file, and the eUCI is added to the XML file.

The *ClientReport* file has several client identifier columns that can be used to create the eUCI:

- **1.** FirstName, LastName, ClientBirthDate and SexatBirthID: These data elements are the inputs to the eUCI.
- 2. ClientUrn: This is the 11-digit unencrypted UCI. It is composed of the first and third letters of the client's first name, the first and third letters of the client's last name, the full date of birth, and the sex at birth code: 1 = Male, 2 = Female, and 9 = Unknown.
- **3.** ClientUci: The 11-character UCI is encrypted with the SHA-1 hashing algorithm to create a 40-character string of letters and numbers. A 41st digit distinguishes clients with the same 40-digit eUCI. See Chapter 5 for more information.

You should not fill out the ClientUCI and ClientURN columns if you populate the FirstName, LastName, ClientBirthDate, and SexAtBirthID columns.

TRAX will use the value in the ClientUci column if it is already provided in the *ClientReport* table. If the ClientUci is not provided for a client and the ClientUrn is provided, then TRAX will encrypt the ClientUrn value to generate the eUCI. If neither the ClientUci or ClientUrn is provided, then TRAX will use the client's first name, last name, date of birth and sex at birth code to create the UCI and subsequent eUCI. Make sure that none of these eUCI components begin or end with blanks or special characters. The below table summarizes this information.

Creation of eUCI	What to do in TRAX	
Provider already creates the	Populate the ClientUCI field with the pre-created	
eUCI internally	eUCIs. These eUCIs will be exported to the client-level data file.	

Creation of eUCI	What to do in TRAX		
Provider creates the	Populate the ClientURN field with the pre-created		
unencrypted UCI internally	unencrypted UCIs. TRAX will encrypt the unencrypted		
	UCIs and export tthem to the client-level data file.		
	Leave the ClientUCI field blank.		
Provider does not already create	Populate first name, last name, date of birth, and sex at		
the eUCI	birth. TRAX will generate the eUCIs for you and export		
	them to the client-level data file. Leave the ClientUCI		
	and ClientURN fields blank.		

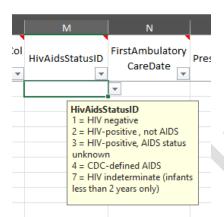
e) Validate Your Data through CHEX

CHEX, an Excel spreadsheet pre-loaded with data validations and conditional formatting, allows you to validate your data prior to uploading it to TRAX.

CHEX's Main Features

CHEX has two main features: Drop Down Menus and Conditional Formatting.

Drop Down Menus





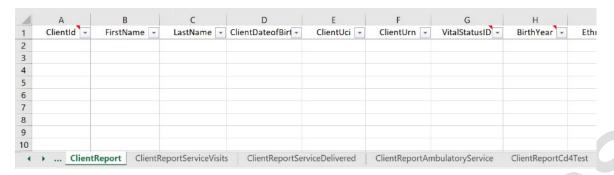
All data elements with specified values have drop down menus showing the allowable values for reporting. If you try to copy and paste an incorrect value into CHEX, you will receive an error message. If you receive an error message, you may try to copy and paste one column at a time until you identify the location of the issue.

Conditional Formatting

Through conditional formatting, CHEX color codes cells with validation issues when you copy and paste data into CHEX. Cells are formatted with colors that will alert you to different data quality problems.

How to Use CHEX

Open the CHEX Excel file included in your downloaded zip file. The file will open showing a blank client report. This tab and the 11 other tabs represent the 12 files to be uploaded to TRAX.



Copy and paste your client-level data into the ClientReport tab. Do not overwrite CHEX's header row given this row has information about the validations in cell comments (as indicated by the red triangles). Place your cursor in cell **A2** and paste your data. Note that your data should conform to the layout of this Excel table and fill in elements in columns A through AE. Columns AF and beyond are prepopulated with formulas, and you should ensure that your data do not overwrite formulas in these columns.

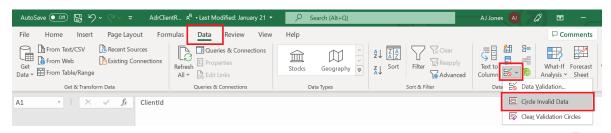
IMPORTANT: Make sure the data elements in your tables are in the same order as in CHEX. Data must be pasted in the correct order for CHEX to work.

After populating the ClientReport tab, copy and paste the data in your other files to each of the other tabs. Once again, start with cell A2, so you do not overwrite the header row. In some of the tabs, there are formulas that should not be overwritten. The table below shows which columns your pasted data should occupy in each worksheet of CHEX:

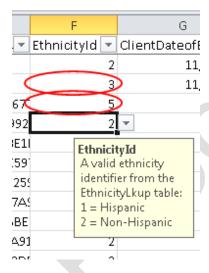
Table	Columns
ClientReport	A - X
ClientReportServiceVisits	A - C
ClientReportServicesDelivered	A - C
ClientReportAmbulatoryService	A - B
ClientReportCd4Test	A - C
ClientReportViralLoadTest	A - C
ClientReportHivRiskFactor	A - B
ClientReportAsianSubgroup	A - B
ClientReportHispanicSubgroup	A - B
ClientReportHealthCoverage	A - B
ClientReportNhpiSubgroup	A - B
ClientReportRace	A - B

After you paste your data in each tab, you will first need to run the data validation check to ensure that you are using the correct values. CHEX will not allow you to manually add incorrect values into a cell, but it will allow you to paste incorrect values in. Running the Data Validation will circle values that aren't allowed on the RSR.

To do this, select the "Data" tab and select "Circle Invalid Data" under "Data Validation."



If you have invalid data, Excel will circle the values (up to 255 per worksheet). In the example below, the cell comment display the allowed values for EthnicityID (1 = Hispanic, 2 = Non-Hispanic). Any other values will be circled.



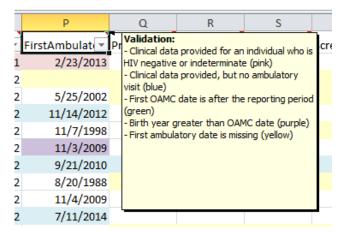
You must check for data validation individually on each sheet. If you have more than 255 invalid data elements, Excel will show a popup warning you about this (Excel will not circle more than 255 elements). As you fix your data directly in CHEX or copy and paste corrected data into the CHEX template, remember to run the validation again since there may have been other validation issues not shown because of the 255 limit.

After performing the validation check, you can begin to investigate other data integrity issues. If there are any issues, you will see them shown as colored cells.

Different colored cells represent different data issues. A summary of the colors and their meaning is included in the comment in the first row of each element.

In the example, there are five checks performed in column P (FirstAmbulatoryCareDate). Each check results in a different color. A white cell represents a cell with no detected data issues.

Columns AI-AR in the ClientReport tab were created to indicate missing data on the subsequent tabs, including HIV risk factor, Race, Medical insurance status, CD4 count, and viral load.



Fixing Your Data

You should investigate the cause of the data issues and correct any problems with your source data and/or data extraction process. You can also correct data issues directly in the spreadsheet or correct them in your original files and paste the data again into a clean version of CHEX.

As you correct your data, the colors will disappear.

Once your data have been validated in CHEX, you can save each tab individually as a .CSV file. However, first, you'll need to delete the columns that were created by us to run the conditional formatting formulas. Please review the table on page 7 for the columns that should be populated with your data; all other columns should be deleted. From each tab, select "File," then "Save As." In the "Save as type" box, select "CSV (Comma Delimited)." Use the same file name and click "Save." Repeat this for each tab.

You may also copy/paste data from the CHEX file tabs directly into the corresponding template.

Example Steps for Preparing Your Data

Sandra meets with her IT staff member, Tyrone, to start the TRAX process. She brings the instruction manual, data dictionary, and RSR crosswalk to the meeting. They discuss the data required for reporting based on their Ryan White funding and eligible clients. They fill out the RSR crosswalk together.

Tyrone uses the report feature in the EHR to extract the client-level data in .CSV format. He makes sure the files contain all the data required.

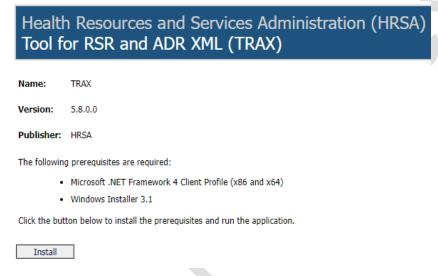
Sandra converts the files to Excel to better manipulate the data. She cuts and pastes columns of data, renames column headers, and replaces values. Then, she pastes her files into CHEX. She identifies some data quality issues, such as dates outside of the reporting period and clients with missing services. She edits those data directly and converts the files back to .CSV, ensuring each file has the correct name.

3.Set Up TRAX

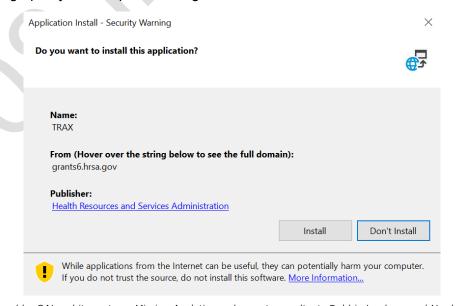
Now that you have created the twelve .CSV files, you will use TRAX to generate the XML file. The first step is to install the program. You can <u>access TRAX here</u>.

a) Install TRAX

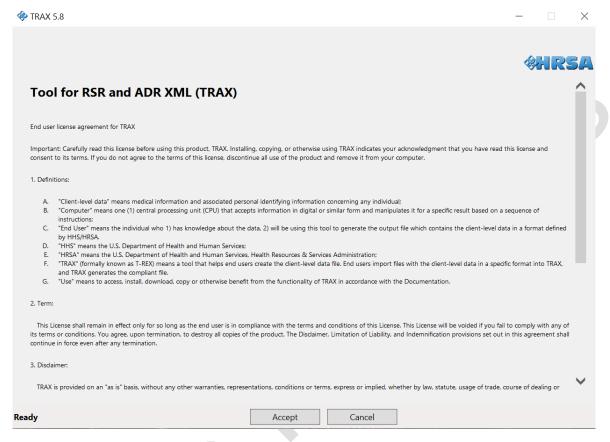
When you click the link, the below page will open. Click Install. You may need administrator permissions to install TRAX, so check with your IT staff at your organization regarding requirements. When you install TRAX, the messages you receive depend on your internet browser and your computer's security settings. You may need to enable cookies to install the application.



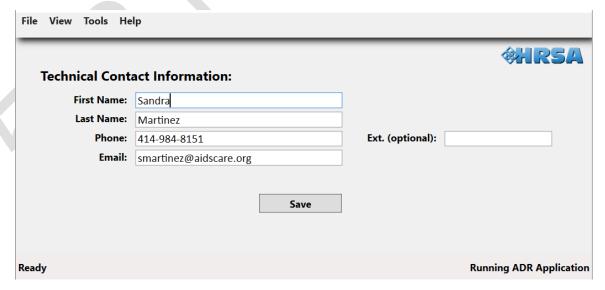
Once you click on 'Install', you will be required to agree to an end license user agreement before you can proceed. Once you agree, TRAX will prompt you to save an application called 'setup' to your computer. Double click on 'setup'. You'll receive a message to install TRAX. You may receive a security warning depending upon your computer settings.



Once you install TRAX, it will automatically open to the end user agreement page; this is the same content as what you reviewed when you initially installed TRAX. Choose 'Accept'.



TRAX will automatically redirect you to the Technical Contact Information page. You must enter this information to continue using TRAX. This contact information is included in the client-level data XML file generated from TRAX. If you want to update your Technical Contact information at a later date, you can go back to File and select Technical Contact.



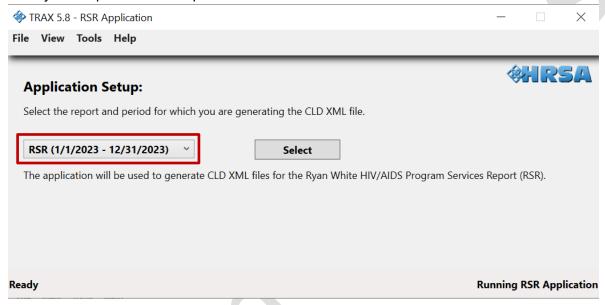
Uninstalling TRAX

The approach to uninstalling TRAX is the same as other applications. Check with the IT staff at your organization regarding how to uninstall applications.

b) Setting Up TRAX

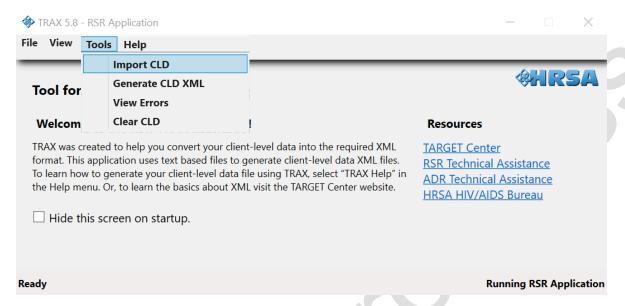
Once you have installed TRAX, a TRAX icon will appear on your desktop. Open TRAX and click on File and Application Setup. Note that each time that you open TRAX, it checks the HRSA server to see if there are any updates

The default setup is the RSR. TRAX can also be used for the ADR. The reporting period is updated each year as part of TRAX updates.

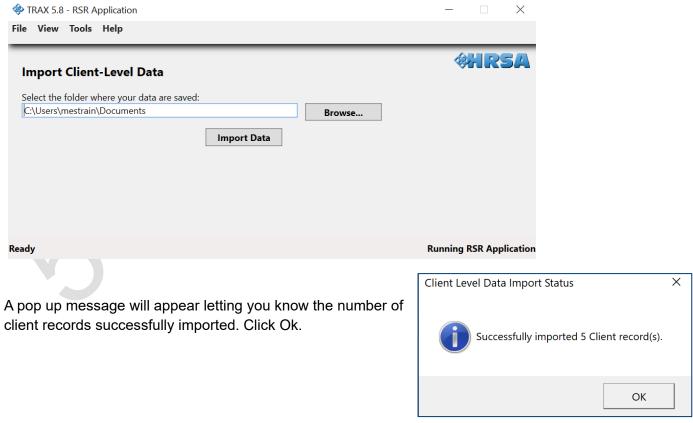


4. Import Data into TRAX

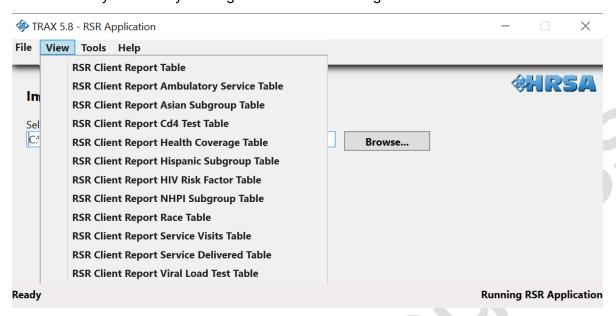
Now you are ready to import your data into TRAX. *Make sure your .CSV files are closed!* Click on Tools and select Import CLD.



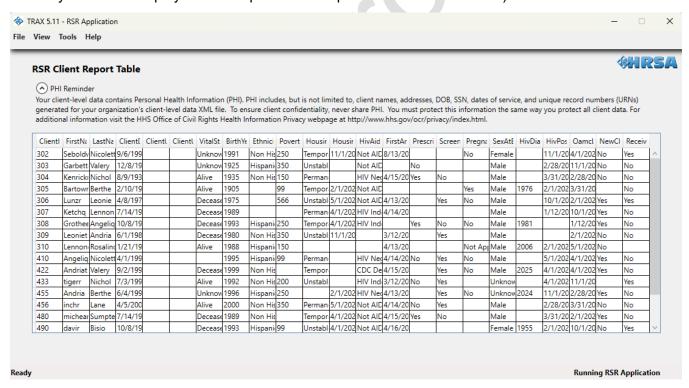
Browse to the folder where your twelve .CSV files are located and click Import Data. Once again, you need all twelve files even if some of them just contain the header row.



You can view your data by clicking on View and selecting the table of interest.



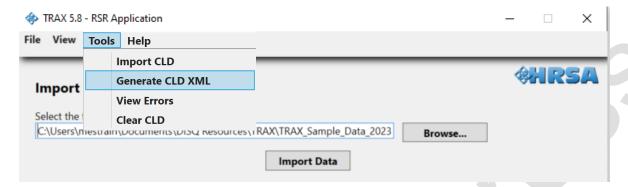
You'll note that you can see the actual response options as opposed to the data values. (Example: The EthnicityID column displays "Non Hispanic" or "Hispanic" instead of a 1 or 2.)



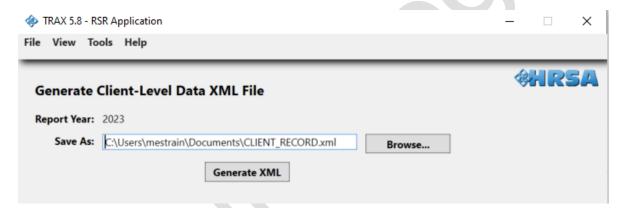
You can clear data by selecting Tools and Clear CLD or by closing the TRAX application. If you already have data in TRAX and try to import additional files, TRAX will ask you if you want to overwrite the pre-existing data. Data cannot be appended in TRAX through multiple imports; however, you may generate and upload more than one file in the RSR Web System.

5. Create the Client-Level Data File

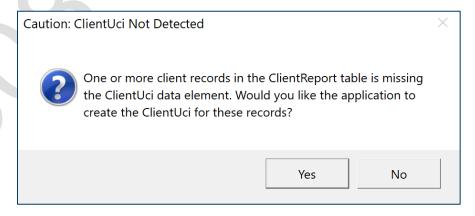
Now that you have successfully imported data into TRAX, create the client-level data file by clicking Tools and Generate CLD XML.



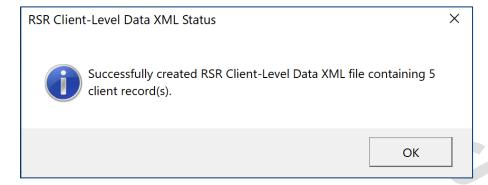
Then, browse to the folder where you want to save your file. Remember where it is saved! Type in a file name that is meaningful to you or use the default name of "CLIENT_RECORD". Add the XML extension.



If you have not populated the ClientUci field for one or more clients, a pop up message will ask you if you would like TRAX to create the eUCls for you. Click Yes.



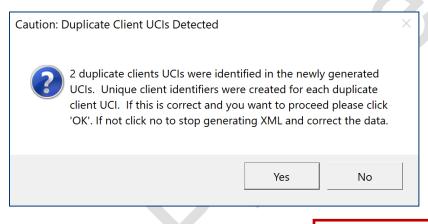
A pop-up message will then let you know that the file was created successfully.



6. Client Duplicates

It is possible that different clients have identical 40-digit eUCIs. Therefore, TRAX adds a 41st character at the end of the eUCI to distinguish these clients. If only one client has a given UCI, the suffix will be "U" for unique. If more than one client has the same UCI, the final character of the first client's eUCI will be "A," the final character of the second client's eUCI will be "B," and so on. The suffix prevents multiple clients from having the same eUCI.

If more than one record has the same eUCI, TRAX will alert you with a pop-up message when you try to generate the client-level data XML file. If you click "Yes", TRAX will assign the last digit of one record's eUCI as an "A" and the last digit of the other record's eUCI as a "B". Once the XML file is created, go to View and Client Report Table to see the new eUCIs.

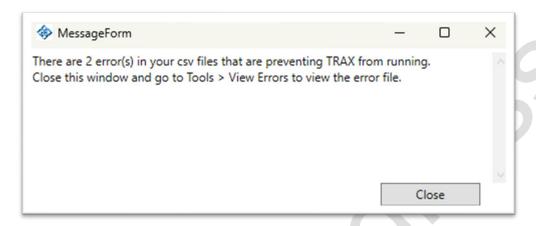


			View of Client Report		
Clientl	FirstName	LastName	ClientDateo ⁻	ClientUci	
29	Ayesha	Hatley	12/18/1949	4D3DDE293CB52A321D44D5435076F33ADC47CCF7U	
73	Mackey	Smith	9/7/1992	42A4D9FE572E8CDCFEBBD9254E3E57604C16DF1AA	
75	Michael	Smith	9/7/1992	42A4D9FE572E8CDCFEBBD9254E3E57604C16DF1AB	
55	Amy	Williams	1/11/1964	908288016A258246F88D6AED2362C4534E3C0D1AU	
61	Pamela	Hutchison	6/12/1977	7186CCE9148102FE84E96788D9188111818427EFU	
65	Bethany	Anderson	5/5/1955	EB0943087A57E7B6F36A2E6CD8BB5A9CC3268E68U	

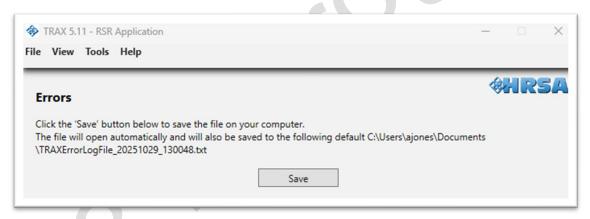
If the records in fact belong to the *same* person, you will need to go back to your source data and merge those records, re-import the corrected .CSV files, and re-generate the client-level data XML file.

7. Common Mistakes

If TRAX is not able to import your data or generate the XML file because of issues with your data, you will receive an error message.



Navigate to Tools > View Errors to download a file that contains a line for each issue you are experiencing. This file will default to saving in your Documents folder.



If you receive an error message, you may have made a common mistake.

Error Message 1: Files not Closed

Close all of your .CSV files before trying to import them.

File Errors: The structure of the csv files is incorrect. Please ensure that the csv file column header names were not changed from the original template.

 The TRAX application cannot access file <u>ClientReport</u> because it is being used by another process.

Error Message 2: Data File is Missing

All twelve .CSV files must be located in the folder. Add the missing file with the correct name and header row.

File Errors: The structure of the csv files is incorrect. Please ensure that the csv file column header names were not changed from the original template.

- 1. File 'ClientReportViralLoadTest' is missing.
- 2. Folder does not contain all the required files. Please provide all required files.

Error Message 3: Missing Column or Incorrect Column Name

Although columns do not need to be in a specific order within a given file, TRAX will look for specific column *names*. If the column name does not match the template, TRAX will produce an error.

File Errors: The structure of the csv files is incorrect. Please ensure that the csv file column header names were not changed from the original template.

- 1. The column name 'PovertylevelPercent' is missing from data file 'ClientReport'.
- 2. The column name 'Poverty2LevelPercent' is unknown for data file 'ClientReport'

Error Message 4: Wrong Value

Check the data dictionary for the correct RSR values.

Schema Errors: The content of the csv files is incorrect and does match the schema requirements. Please review the RSR Schema Implementation Guide for coding options.

1. Client ID 305 in file 'ClientReport':

The 'EthnicityID' value '9' is invalid. Please refer to the XML Schema Implementation Guide for the allowed values.