

Guidelines for Creating the RSR Encrypted Unique Client Identifier (eUCI)

January, 2010

Your RSR client-level data XML file should include an encrypted Unique Client Identifier (eUCI) for each client. This eUCI will protect each client's identity and ensure the privacy of personal health information. It will also allow HAB to link data that belong to the same client across multiple providers to unduplicate the clients who receive Ryan White funded services. As the RSR system matures, the eUCI will help HAB follow care over time. In this document, we provide an overview of the eUCI, how you can incorporate it into your system, and how you can treat unconventional data. We also provide recommendations for consistent data entry and data cleaning.

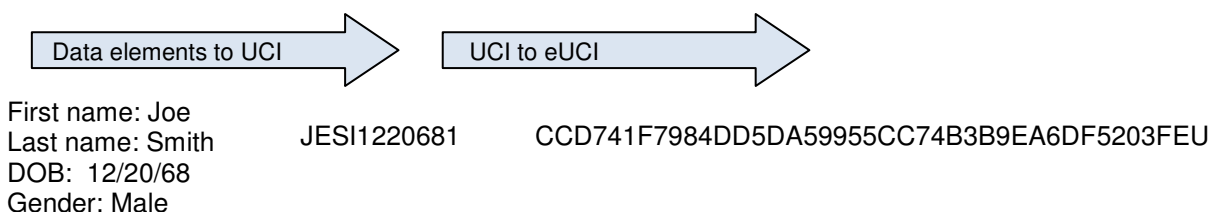
What Is the RSR System eUCI?

The Unique Record Number (URN), which is commonly used by Ryan White grantees and providers, will act as the RSR system UCI. The URN is composed of the following data elements:

- **First and third characters of first name**
- **First and third characters of last name**
- **Full date of birth:** MM/DD/YY
- **Gender code:** 1=Male, 2=Female, 3=Transgender, 9=Unknown
- **Suffix to indicate UCI uniqueness:** If only one client within a provider/grantee site 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 UCI will be "A," the final character of the second client's UCI will be "B," and so on. The suffix will limit the number of clients who have the same UCI.

The first 11 characters of the UCI will be encrypted with the SHA-1 hashing algorithm to create a 40-character eUCI. The SHA-1 is a trap door algorithm, meaning that the original UCI is unrecoverable from the eUCI. The SHA-1 algorithm meets the highest privacy and security standards.

The "suffix to indicate UCI uniqueness" will appear as the 41st character. If your agency does not have an internal system to determine if more than one client shares the same UCI, the final character will always be "U". If you would like more information on how to develop this system, please contact us at RSR.TA@sphereinstitute.org.



How Can I Incorporate the eUCI into My Data System?

All grantees and providers should use the same guidelines for creating and encrypting the UCI. HAB is working with a group of “RSR-ready” vendors to ensure that they have the correct UCI creation and encryption algorithms incorporated into their systems.

RSR-Ready Systems (Effective 4/30/09)
AIRS Allscripts ARIES CAREWare Casewatch Millennium CHAMPS eClinicalWorks (2010) eCOMPAS Labtracker Provide Enterprise

If you do not have an RSR-ready system, you should download the eUCI Application, which is a DLL file. To access this application, please contact Ellie Coombs at: ecoombs@sphereinstitute.org or RSR.TA@sphereinstitute.org. She will provide you with a user name and password to download the application from a website and any technical assistance you may need.

How Does the eUCI Application Treat Unconventional Data?

Although the eUCI Application can read some unconventional data, other data formats are considered invalid and will not result in a valid eUCI. In the following table, we present how the application interprets unconventional data and what data formats are invalid.

Issue	Rule	Example
Missing data	The eUCI will be invalid*	
First name and last name		
Name < 3 characters	Third character of the UCI is 9.	First name = TJ; first two characters of UCI = T9
Spaces	Spaces are replaced with 9.	Last name = De Young; third and fourth characters of UCI = D9
Apostrophes and hyphens	Replaced with a 9 with one exception. If name starts with an apostrophe or hyphen, or any other non-letter character, the eUCI will be invalid.	Last name = O’Hagan; third and fourth characters of UCI = OH Last name = Fu-Smith; third and fourth characters of UCI =F9.
Accented letters	Accented letters are replaced with non-accented letters	First and last name = Raúl Grünwald; first four characters of the UCI = RUGU

Date of birth	
Incorrect format	If not MM/DD/YYYY or MM/DD/YY, the eUCI will be invalid.
Gender	
Incorrect format	If not 1, 2, 3 or 9, the eUCI will be invalid.

***Missing Data:** If you are missing data elements required for the eUCI, you should do everything possible to obtain those data elements. This effort will improve not only the quality of data linking, but also case management and patient care. If you are unable to obtain required data elements, you should use the following placeholder data until they are obtained:

- Month or day of birth: 01
- Year of birth: Best estimate

How Can I Improve Data Entry to Reduce eUCI Duplicates?

To help ensure that no client has more than one eUCI, data elements should be consistently recorded across providers and over time. To reduce duplicates, please follow the below recommendations:

- Record legal names. For first and last names, use, in this order, 1) name as it appears on driver license, 2) name as it appears on primary insurance card, 3) name as it appears on any other legal identification, including passport or ID from country of origin.
- If a client has no ID and you see the client is duplicated because of inconsistent use of name forms, make the final decision on how to record the name.
- For nicknames, mailing names, alternate names, and last name "suffix" (e.g., Junior), create separate fields. These fields will not be used to create the eUCI, but can help your agency with mailings and addressing the client in the way he/she wants.

How Can I Clean My Data to Reduce eUCI Duplicates?

You should systematically clean your data so no single client has more than one eUCI. For example, you can pull up records for all clients who have the same birth date and check to see if these clients have similar names (William versus Bill). For possible matches, verify if records actually belong to the same client by calling your providers or using additional information in your database, such as address or health care provider. If so, edit the data so eUCIs match and records merge. Remember that some repeat eUCIs may be true duplicates, so be careful not to merge records that actually belong to different people who coincidentally share the same data elements.

It is not uncommon for clients to change their last names, adopt new nicknames, or change how they report their gender. If one of the data elements that makes up the eUCI changes for a given client, the client's eUCI will change. When a client's eUCI changes between two reporting periods, HAB will not be able to link the client's records. If a client reports a change in a data element or you or your staff detect a change, be sure to edit data so the latest information is captured. Also, HAB is creating a process for grantees and providers to inform HAB that a

client's eUCI has changed during the reporting period. HAB will provide more information on this process when it is developed.

Thanks to Kim Lawton for her contribution to this TA resource.