



Aliados Health

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Validating Data for the UDS+ Submission Out of Relevant

Data Workgroup Webinar October 8, 2024

By Ben Fouts, Data Analyst, Aliados Health

Version 2

Update

- In the recording of this presentation, Ben mentioned that the UDS+ is for medical patients only. However, this is only the minimum submission that HRSA requires. Relevant has designed the UDS+ to cover all UDS patients, not just the medical patients.
- Furthermore, the minimum submission requires data for the measure Controlling High Blood Pressure. The Relevant UDS+ is also submitting data for Cervical Cancer Screening, Colorectal Cancer Screening, and Hemoglobin A1c Control.
- References to “medical patients only” and the quality measures have been updated on the slides in this presentation. Therefore, there may be differences between the slides below and the slides in the webinar recording.



Agenda

1. UDS+ Background
2. Orientation to the UDS+ in Relevant
3. Validation of UDS+ Data



UDS+ Background



UDS+ Submission for Calendar Year 2024 (CY24)

Uniform Data System (UDS) Modernization Initiative

<https://bphc.hrsa.gov/data-reporting/uds-training-and-technical-assistance/uniform-data-system-uds-modernization-initiative>

- Health centers are required to submit two reports:
 1. The “legacy” UDS Report (i.e., the summary tables that have been submitted in previous years) by **February 15, 2025**
 2. A minimum submission of de-identified patient-level data (UDS+) as part of the UDS Modernization Initiative by **April 30, 2025**
- Submission last year (CY23) was voluntary, but is required this year (CY24)



What is the UDS+ ?

From HRSA:

- UDS+ is the electronic submission of de-identified patient-level data from health centers to HRSA that corresponds with portions of existing UDS data elements, including information related to:
 - ✓ Health center patient demographics
 - ✓ Health center services utilized
 - ✓ Select electronic Clinical Quality Measures (eCQMs)



How Will UDS+ Impact Aliados Health Member Health Centers?

The benefits to health centers include:

- Reducing the reliance on manual data entry (in the future)
- Preparing to report data in accordance with federal interoperability standards
- Improving data quality because it bypasses the manual aggregation step (in Relevant Quality Measures)
 - ❑ Alignment to eCQM definitions
 - ❑ Standardization of data
 - ❑ Reduces calculation errors and misinterpretation of measures



How Will UDS+ Impact Aliados Health Member Health Centers?

The burdens to health centers include:

- For CY24, UDS+ submission will be in addition to the legacy report (so the benefits are more for future reporting)
- No way to directly see the Quality Measure outcomes in submitted data. Less control over validation of the overall results
- Relevant will still need to update the UDS Quality Measures and Value Sets every year.
- Health centers will still need to validate and monitor Quality Measures in order to use them for performance improvement activities




Data Security

- De-identified patients (no way to link it to individuals)
- Data is transmitted to HRSA using Fast Healthcare Interoperability Standards (HL7 FHIR R4). These reporting standards are actively being adopted across the Department of Health and Human Services and the health care industry.
- You do not need to know anything about FHIR ([update: pronounced like “fire”](#))
- Relevant submits the data for you and gives you a status update. You do not have to handle the files or log-in to HRSA to upload them yourself



Data Required for the Submission

2024 UDS+ Requirements



Overview

- HRSA will require a minimum UDS+ submission for 2024.
- Your EHBs UDS submission will continue to be the submission of record for 2024.
- 2024 UDS+ Submissions due by April 30, 2025.
- Medical patient demographics and one eCQM will be required.

Requirement 1: Medical Patients Only

At minimum, UDS+ data for medical patients only will be required – dental, behavioral health, etc. are not required.

- Due to multi-system challenges, data for full patient population is not required.
- We highly encourage submission of full patient population if able.

Requirement 2: All Demographic Tables

Submit *all* demographic tables to include:

- **Table:** Patients by ZIP Code
- **Table 3A:** Patients by Age and by Sex Assigned at Birth
- **Table 3B:** Demographic Characteristics
- **Table 4:** Selected Patient Characteristics

Update: this is the minimum requirement. Relevant UDS+ will include all patients

More



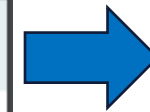
Data Included in the Submission

Requirement 3: One Electronic Clinical Quality Measure

Submit one eCQM from one of the clinical tables below:

- **Table 6B:** Quality of Care Measures
 - Breast Cancer Screening
 - Cervical Cancer Screening
 - Colorectal Cancer Screening
- **Table 7:** Health Outcomes and Disparities
 - **Controlling High Blood Pressure***
 - Diabetes: Hemoglobin A1c (HbA1c) Poor Control (>9.0%)

* Recommended measure



Update: this is the minimum requirement. Relevant UDS+ will include the measures Controlling High Blood Pressure, Cervical Cancer Screening, Colorectal Cancer Screening, and Hemoglobin A1c Control



UDS+ Technical Documentation

You do not have to read through this before submitting the data

<https://fhir.org/guides/hrsa/uds-plus/>

HRSA Health Resources & Services Administration **HRSA 2023 Uniform Data System (UDS) Patient Level Submission (PLS) (UDS+) FHIR IG** 1.1.0 - STU1 Release 1.1 - Standard for Trial-Use 

[IG Home](#) [Table of Contents](#) [UDS Background](#) [Specification](#) [Artifact Index](#) [Change History](#) [Support](#)

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This page is part of the HRSA Uniform Data System (UDS) Patient Level Submission (PLS) (UDS+ or uds-plus) FHIR IG (v1.1.0: STU1) based on FHIR (HL7® FHIR® Standard) R4. This is the current published version. For a full list of available versions, see the [Directory of published versions](#)

1 UDS Plus Home Page

<i>Official URL:</i> http://fhir.org/guides/hrsa/uds-plus/ImplementationGuide/fhir.hrsa.uds-plus	<i>Version:</i> 1.1.0	
<i>IG Standards status:</i> Trial-use	<i>Maturity Level:</i> 2	<i>Computable Name:</i> UdsPlusFhirIg



UDS+ Data Elements

For reference only. <https://fhir.org/guides/hrsa/uds-plus/dataelements.html>

7.2 Analysis of the Zip Code Data Table, Table 3A, Table 3B, Table 4 and Table 6A

The data elements from the above tables have been analyzed to understand the additional data elements that would be needed to be supported by certified EHR technologies as part of the FHIR APIs. This analysis is presented in the table below which identifies the UDS data element, the profiles to be used for UDS+ reporting and the differences between US Core/USCDIv2 and UDS+.

UDS Data Element	UDS+ Reporting FHIR Profile Mapping	Differences with US Core - 6.1.0/USCDIv3
UDS Table : Patients By Zip Code Table		
Zip Code	de-identified-uds-plus-patient.address.postalCode	None
Insurance Type	uds-plus-coverage.type	Value Set specific to UDS+ reporting

7.3 Analysis of the Table 6B and 7 (Quality of Care Measures and Health Outcomes and Disparities)

UDS+ reports require data to be reported for Quality of Care Measures and also for Health Outcomes and Disparities measures. In order to compute the various populations that fall into the patient population, numerators, denominators, exclusions for the measures the required data elements were identified from the Quality Measure eCQM definitions. These data elements are based of the QDM data elements. These QDM data elements are then mapped to QI Core or UDS+ profiles for reporting purposes. In addition analysis was performed to identify the delta between US Core/USCDIv2 and the data elements required for the computation of the quality measures. This analysis will aid in the decision making on how to best align the ONC USCDI+ data elements to Federal Agency requirements in future versions of USCDI and USCDI+.

The analysis is presented in the table below.

UDS Data Element	FHIR Profile Mapping	Differences with US Core 6.1.0
UDS Table : Controlling High Blood Pressure (CMS165v11)		
Assessment, Performed - Code	uds-plus-observation.code	None
Assessment, Performed - Result	uds-plus-observation.value[x]	None



UDS+ Frequently Asked Questions

<https://bphc.hrsa.gov/data-reporting/uds-training-and-technical-assistance/uds-frequently-asked-questions>

Will health centers be able to review their UDS patient-level data?

Yes, we are developing a mechanism to allow health centers to review their UDS+ submission. UDS+ review and submission functionality is in development and we will provide details on these at a later time.



UDS+ Frequently Asked Questions

<https://bphc.hrsa.gov/data-reporting/uds-training-and-technical-assistance/uds-frequently-asked-questions>

Will health centers be able to validate submitted UDS+ data to ensure accuracy?

Layers of validation are built into the FHIR® transactions, but we are also developing internal business logic to perform validation analyses on the submitted patient-level data. UDS+ review functionality is in development and we will provide details on these at a later time.



Orientation to UDS+ in Relevant



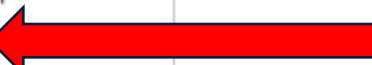
UDS+ User Roles in Relevant

- Users must have the "View UDS+" ability to see the UDS+ module.
- Users must have the "Manage UDS+" to configure UDS+ settings, create submissions, and submit to HRSA



Access the UDS+ in Relevant


Reports

- Reports
- Dashboards
- UDS Report: 2024
- UDS+ 
- Data Explorers

Help pages



UDS+

UDS+ is a new initiative which involves reporting more detailed data to HRSA. It's optional for 2023 [Learn more about UDS+ in Relevant.](#) 

Submissions [About submissions](#)

ID	Generated date	Generated by	Submitted date	Submitted by	Status	Actions
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Help Pages

[Relevant Healthcare](#) > [UDS & Regulatory Reporting](#) > [UDS+](#)

Articles in this section

[UDS+ in Relevant](#)

[Technical details of UDS+ in Relevant](#)

[Frequently Asked Questions for UDS+](#)

[Register your health center with HRSA for UDS+](#)

[Relevant Healthcare](#) > [Webinars and Training](#) > [Webinars and Training](#)

UDS and UDS+ 2024

Relevant's UDS+ Presentation at NACHC Testing Forum (May 2023 | [slides](#) | [recording](#))

This is the best webinar for an overview of Relevant's UDS+ functionality. The recording is provided by NACHC; Relevant's presentation begins at 1:16:00.

UDS and UDS+ 2023

Submitting UDS+ with Relevant (December 2023 | [slides](#) | [recording](#))

Interested in submitting UDS+ with Relevant for 2023? This webinar provides an overview of UDS+ and the submission process in Relevant, as well as how to prepare.

Updates on UDS+ and General UDS Q&A ([slides](#) | [recording](#))

Topics include January 2024 updates on UDS+, as well as Q&A about both UDS and UDS+ topics.
Note: if you're interested in UDS+, we recommend starting with "Relevant's UDS+ Presentation at NACHC Testing Forum."



Submissions

From Relevant: “A submission is a full set of UDS+ data, captured at a specific point in time. When you generate a UDS+ submission in Relevant, its data will be frozen and will not change.”

UDS+

UDS+ is a new initiative which involves reporting more detailed data to HRSA. It's optional for 2023. [Learn more about UDS+ in Relevant.](#)

Submissions [About submissions](#)

ID	Generated date	Generated by	Submitted date	Submitted by	Status	Actions
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The diagram illustrates the submission status options and their corresponding messages. A red box highlights the 'Status' column in the table above. A red arrow points from this box to a 'Status' dropdown menu. The dropdown menu has two options: 'SUCCEEDED' and 'READY TO SUBMIT'. Red arrows point from each option to a corresponding message box. The 'SUCCEEDED' option points to a green message box: 'Status SUCCEEDED. This submission has been accepted by HRSA. Congratulations! 🎉 At some point the HRSA team may provide feedback about your submission.' The 'READY TO SUBMIT' option points to a blue message box: 'Status Ready to submit. This submission is ready to be sent to HRSA.'



Creating and Reviewing a Submission

- A user with the proper credentials can generate a Submission by clicking the Generate UDS+ Submission button
- Once a Submission is generated, click the “View Details” button in the Actions column
- More than one Submission can be generated but only one is sent to HRSA. If you participated in the UDS+ testing last year, you may see 2023 submissions in your system

Generate UDS+ submission

Actions

View details

ID	Generated date
1	3/11/2024
2	7/14/2024



Resources

- A single UDS+ Submission is composed of a number of tables called Resources. These contain row-level data about a particular concept. The concepts are defined by HRSA in the UDS+ Implementation Guide.
- Resources do not follow the legacy UDS Tables, but many are named with familiar terms such as Patients or Encounters

Data summary

For details about how this data is generated, see our [UDS+ technical documentation](#).

Resource What is a resource?	Number of lines	Actions
Patients Provides demographic data about each UDS patient, including age, race, ethnicity, gender identity, housing status, veteran status, etc. The data points roughly correspond to the ZIP Codes Table, Table 3A, Table 3B, and Table 4. Most other UDS+ resources reference these patient records. Mapping details	13,156	View data ▾
Encounters Includes all visits (both UDS and non-UDS) during the reporting year, which relate to a patient with a UDS visit, and are counted in the Selected Services Renedered section of UDS Table 6A, or are in the UDS universe. A visit location (referencing the Locations resource) allows HRSA to identify visits at school-based or public housing sites, as required by UDS Table 4. Mapping details	40,156	View data ▾



List of Resources

You will need to validate each of these Resources

- Clinical Result Observations
- Coverages
- Diagnoses
- Encounters
- Income Observations
- Lab Observations
- Locations
- Patient Reporting Parameters
- Patients
- Payers
- Procedures
- Sexual Orientation Observations



Where Does the Data Come From?

Encounters

Includes all visits (both UDS and non-UDS) during the reporting year, which relate to a patient with a UDS visit, and are counted in the Selected Services Rendered section of UDS Table 6A, or are in the UDS universe. A visit location (referencing the Locations resource) allows HRSA to identify visits at school-based or public housing sites, as required by UDS Table 4. [Mapping details](#)

35,734

[View data](#)

... Or
click
here

[View mapping SQL](#)
[Download FHIR data](#)

Mapping details for Encounters

The UDS+ Implementation Guide requires an E&M code for each encounter; we source this from the Visit Billing Codes data element. If no appropriate code is found, we default to 99499.

The visit's location pulls from the `location_id` column of the Visits data element, which references the Locations data element.

Consult the [SQL mapping](#) for additional details.

Mapping SQL for Encounters

The content of the "Encounters" UDS+ resource is sourced from the following database views.

rdm.uds_plus_encounter_mappings

```
-- View for UDS+ encounter mappings
-- FHIR definition: https://fhir.org/guides/hrsa/uds-plus/StructureDefinition-uds-plus
--
-- Fetch all the visits that relate to a UDS patient and have diagnosis codes,
-- billing codes, or other conditions from the 'Selected Services Rendered' section
-- of Table 6A.
WITH filtered_visits AS (
  SELECT
    visits.id AS visit_id,
    visit_date,
    patient_id,
    location_id,
    -- This billing_codes column is not sent to HRSA and only used for validation
    CASE
      WHEN COUNT(billing_codes.code) = 0 THEN NULL
      ELSE JSON_AGG(JSON_BUILD_OBJECT(
        'code', billing_codes.code,
        'code_system', billing_codes.code_system
      ))
    END AS all_billing_codes
  FROM visits
```



Click on a Resource

Clinical Result Observations >



Description

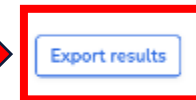
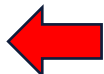
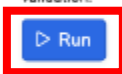
Blood pressure data

- Blood pressure readings are pulled from the Blood Pressure Reading data element. Only the reading from the patient's most recent visit within the reporting year is included.
- Since LOINC codes are required by UDS+ but often unavailable in the EHR, we hard-code 8488-6 for systolic and 8462-4 for diastolic readings.

Note: Including additional blood pressure readings would make it impossible for HRSA to calculate the Controlling High Blood Pressure measure, since the measure specifically requires the latest reading, but UDS+ data cannot include dates more precise than a year.

[View mapping SQL](#)

This report was auto-generated by Relevant. Columns with UDS+ in their name represent the de-identified data sent to HRSA; other columns are provided to support data validation.



This page is like a Relevant Report. Click “Run” to populate the table and “Export Results” to see it in Excel

Submission and source data

Add view ▼

[Show chart](#)

UDS+ Patient ID	Relevant Patient ID	MRN	Last Name	UDS+ Performed Date Y...	Performed On	UDS+ Category
187729	108318	813732	Kris	2023	2023-04-25	vital-signs
187729	108318	813732	Kris	2023	2023-04-25	vital-signs
187733	108340	753120	Tremblay	2023	2023-07-05	vital-signs
187733	108340	753120	Tremblay	2023	2023-07-05	vital-signs
187735	108362	482523	Fahey	2023	2023-05-16	vital-signs
187735	108362	482523	Fahey	2023	2023-05-16	vital-signs
187736	108368	102157	OConner	2023	2023-06-09	vital-signs
187736	108368	102157	OConner	2023	2023-06-09	vital-signs
187737	108376	541502	Emard	2023	2023-06-06	vital-signs
187737	108376	541502	Emard	2023	2023-06-06	vital-signs
187740	108398	368983	Renner	2023	2023-07-11	vital-signs




Columns on the Resource Tables

- The view of the Resource Table in Relevant is NOT the data that will be sent to HRSA. That data is the FHIR file which has only UDS+ columns
- The Resource Table contains columns that you can use to validate, such as MRN, name and Relevant patient_id (depending on table) as well as columns that show the Relevant data next to the UDS+ data. For example, from the Patients Resource:

Column with Data from Relevant	Column with Data Transformed to UDS+	UDS+ Codes (Don't Worry About)	
Zip code	UDS+ zip code	--	--
Assigned female at birth?	UDS+ birthsex	--	--
Race	UDS+ race	UDS+ race code	UDS+ race code system
	UDS+ detailed race	UDS+ detailed race code	UDS+ detailed race code system
Ethnicity	UDS+ ethnicity	UDS+ ethnicity code	UDS+ ethnicity code system
	UDS+ detailed ethnicity	UDS+ detailed ethnicity code	UDS+ detailed ethnicity code system
Gender identity	UDS+ gender identity	UDS+ gender identity code	UDS+ gender identity code system
Language	UDS+ language	UDS+ language code	--



Data Tables (Technical, for Programmers)

- When a Submission is generated, the data is written to a number of tables in RDM.
- There is one table for every Resource (plus helper tables)
- These tables begin with “uds_plus_” and have names similar to the Resource name, such as uds_plus_patients and uds_plus_encounters
- In a query, use column named uds_plus_submission_id that corresponds to the generated Submission ID. For example, on the Submission page in Relevant, the ID is 

ID	Generated date
1	3/11/2024
2	7/14/2024



Other Technical Notes (for Programmers)

Encounters

Includes all visits (both UDS and non-UDS) during the reporting year, which relate to a patient with a UDS visit, and are counted in the Selected Services Renedered section of UDS Table 6A, or are in the UDS universe. A visit location (referencing the Locations resource) allows HRSA to identify visits at school-based or public housing sites, as required by UDS Table 4. [Mapping details](#)

35,734

View data

View mapping SQL

Download FHIR data



- There is also an option to download the FHIR data, the “true and exact contents of your UDS+ submission.”
- These files contain JSON formatting. They are less useful for validation. There is probably not a reason to archive the FHIR data files.
- The records in these files are de-identified and so do not contain a patient_id that can be used to JOIN or otherwise look-up patients in Relevant



Validation of UDS+ Data



UDS and UDS+ Data Are NOT the Same

From a slide on the HRSA presentation “UDS+ Reporting Requirements & the UTC”

(<https://drive.google.com/file/d/1fDc-in-doHS0bo2MbHGbqF751N2ave3H/view>)

- **What if my UDS+ FHIR® data is inconsistent with my UDS data submission via EHBs?**
 - Health centers will not be penalized for any variations between data submitted using FHIR® and EHBs. The CY 2024 UDS+ submission will only include medical patients for many health centers, so HRSA expects the data to differ.



UDS and UDS+ Data Are NOT the Same

From the Relevant UDS+ FAQ

(<https://relevantsupport.zendesk.com/hc/en-us/articles/20774621833623-Frequently-Asked-Questions-for-UDS>)

Q: Why don't our UDS+ numbers match what we see in Relevant's traditional UDS module?

A: In some cases, the line-level data requested by UDS+ does not have an analogue on the traditional UDS report. In other cases, HRSA's technical guidance for UDS+ is incomplete or diverges from the UDS Manual, causing mismatches in the numbers. (For example, the way UDS+ categorizes race and ethnicity differs from the traditional UDS report.) We have provided extensive feedback to HRSA about these issues, and expect their guidance to evolve in the future.



UDS+ Validation

From the Relevant UDS+ FAQ

(<https://relevantsupport.zendesk.com/hc/en-us/articles/20774621833623-Frequently-Asked-Questions-for-UDS>)

Q: How closely should we scrutinize our UDS+ data?

A: In our opinion, spending some time familiarizing yourself with the contents of UDS+ makes sense, but chasing down discrepancies between UDS+ and UDS does not.

The goal of 2024 submissions is to increase participation in UDS+, learn from the process, and improve it for the future. HRSA fully expects UDS+ data to diverge from traditional UDS data, and has indicated, both in webinar discussions and in writing, that **discrepancies between the traditional UDS report and UDS+ are not a cause for concern.**



UDS+ Validation

Even though a perfect validation is not possible or necessary, health centers should:

- Look for any other glaring errors in the data before submission (minimum level of due diligence)
- Ensure that the mapping between the EHR and UDS+ in Relevant is correct
- Minimize the number of records in the submission with unknown or missing data when that data is available in the EHR
- Give feedback to Relevant so they can continually improve the performance of their product



Validation Notes

- Each of the 12 Resource Tables should be validated
- Validation includes:
 1. Making sure the data is being pulled from the correct columns in Relevant (by definition)
 2. Looking to see if the data in those columns matches the expectation based on knowledge of data in Relevant and the EHR
 3. Confirming the mapping of your EHR categories to UDS+ categories
 4. Comparing the number of records to an estimation of how many records there should be
 5. Random patient audit



1. Correct Data Sources

- The UDS+ generally uses the same standard RDM fields as the UDS report in Relevant.
- In most cases, it is probably the field you expect to be used. However, some health centers have customization or other special considerations for certain fields.
- For example, you might be Transitioning to Epic and so you might know from experience that a certain field is not yet fully mapped



1. Correct Data Sources

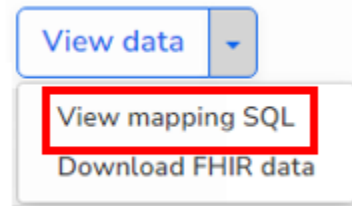
Patients

Provides demographic data about each UDS patient, including age, race, ethnicity, gender identity, housing status, veteran status, etc. The data points roughly correspond to the ZIP Codes Table, Table 3A, Table 3B, and Table 4. Most other UDS+ resources reference these patient records **Mapping details**

Is this what you expect?

Race and ethnicity

Race and ethnicity are pulled from the **race_id** and **ethnicity_id** columns of the Patients data element, which reference values in the Race and Ethnicity data elements.



It is not necessary to review the code for each Resource table, but if you see unexpected data, a programmer can investigate by referencing the code

rdm.uds_plus_races

```
-- Mapping UDS+ race for every patient
-- FHIR definition: https://fhir.org/guides/hrsa/uds-plus/StructureDefinition-uds-plus-race-extension.html
--
-- The `race_mapping` CTE maps rows from the `rdm.races` into
-- `omb-race-category` values (from FHIR). The `detailed_race_mapping` CTE maps
-- `rdm.races` to `rdm.cdc_race_and_ethnicity_value_set` based on text
-- matching. This is imperfect because we often do not have the detailed
-- race information, e.g., we don't have enough information to find the
-- detailed race of patients recorded as "White".
WITH race_mapping AS (
  SELECT
    id,
    races.name AS race,
    -- Reference: http://hl7.org/fhir/us/core/STU6/ValueSet-omb-race-category.html
    CASE
      WHEN races.name ~* 'Asian Indian|Chinese|Filipino|Japanese|Korean|Vietnamese|\\mAsian' THEN 'Asian'
      WHEN races.name ~* 'Pacific Islander|Hawaiian|Guamanian|Chamorro|Samoan'
        THEN 'Native Hawaiian or Other Pacific Islander'
      WHEN races.name ~* 'Black|African American' THEN 'Black or African American'
      WHEN races.name ~* 'American Indian|Alaska Native|Alaskan Native'
        THEN 'American Indian or Alaska Native'
      WHEN races.name ~* 'White|Caucasian' THEN 'White'
      WHEN races.name = 'More than one race' THEN 'Other Race'
      WHEN races.name ~* 'Unreported|Not reported|Refused|Declined' THEN 'asked but unknown'
      ELSE 'unknown'
    END AS uds_plus_race
  FROM races
```



1. Correct Data Sources

- Any errors or incomplete mapping in your Relevant 2024 UDS report will reflect on your UDS+
- Note that the Coverage Resource relies on the standard mapping. Insurance mapping is not complete or accurate at all health centers

Technical error	Sexual orientation mapping error ⓘ	44
Technical error	Gender mapping error ⓘ	8

Mapping details for Coverages

Relevant assigns UDS/UDS+ insurance categories based on the `medicaid`, `medicare`, `chip`, `private_insurance`, or `uninsured` columns in the Payers data element, and the `medicare_dually_eligible` column from the Insurance Enrollments data element.

UDS/UDS+ category	What Relevant looks for
None/Uninsured	The <code>uninsured</code> column is true, and all the other columns are false
Medicaid Title XIX	The <code>medicaid</code> column is true, and all the other columns are false
Private Insurance	The <code>private_insurance</code> column is true, and all the other columns are false



2. Expected Data Categories

Example for the “Patients” Resource

1. View Data and Run the Resource table, then export to Excel
2. Insert a Pivot Table
3. Look at the data categories of columns.
 - Do they make sense?
 - Are there mapping errors?
 - Are the categories in nearly the same ratios as the UDS report or other sources in Relevant?

	N	O	P	Q
Row Labels	Count of Id			
American Indian/Alaska Native		245	3%	
Asian		1043	15%	
Asian Indian		62	1%	
Black/African American		1093	15%	
Chinese		13	0%	
Filipino		61	1%	
Guamanian or Chamorro		2	0%	
Japanese		6	0%	
Korean		5	0%	
More than one race		257	4%	
Native Hawaiian		63	1%	
Other Asian		130	2%	
Other Pacific Islander		367	5%	
Samoan		5	0%	
Unknown/Race not mapped		6	0%	
Unreported/Refused to report		1383	20%	
Vietnamese		53	1%	
White/Caucasian		2275	32%	
Grand Total		7069		

PivotTable Fields

Choose fields to add to report:

Search

- UDS+ zip code
- Assigned female at birth?
- UDS+ birthsex
- Race
 - UDS+ race
 - UDS+ race code
 - UDS+ race code system
 - UDS+ detailed race
 - UDS+ detailed race code
 - UDS+ detailed race code system
- Ethnicity
- UDS+ ethnicity

Drag fields between areas below:

Filters	Columns

Rows	Values
Race	Count of Id

3. Mapping of EHR categories to UDS+ Categories

- Many EHR categories already have been standardized to the UDS categories
- Not all UDS+ categories are exactly the same as the EHR categories
- Nonetheless, you can make general observations about incomplete or wrong mapping



3. Mapping of EHR categories to UDS+ Categories

Race	UDS+ race	UDS+ detailed race
<input type="checkbox"/> American Indian/Alaska Native	<input type="checkbox"/> American Indian or Alaska Native	Alaska Native
<input type="checkbox"/> Asian	<input type="checkbox"/> Asian	other
<input type="checkbox"/> Asian Indian	<input type="checkbox"/> Asian	other
<input type="checkbox"/> Black/African American	<input type="checkbox"/> Black or African American	Black
<input type="checkbox"/> Chinese	<input type="checkbox"/> Asian	Chinese
<input type="checkbox"/> Filipino	<input type="checkbox"/> Asian	Filipino
<input type="checkbox"/> Guamanian or Chamorro	<input type="checkbox"/> Native Hawaiian or Other Pacific Islander	Chamorro
<input type="checkbox"/> Japanese	<input type="checkbox"/> Asian	Japanese
<input type="checkbox"/> Korean	<input type="checkbox"/> Asian	Korean
<input type="checkbox"/> More than one race	<input type="checkbox"/> Other Race	other
<input type="checkbox"/> Native Hawaiian	<input type="checkbox"/> Native Hawaiian or Other Pacific Islander	Native Hawaiian
<input type="checkbox"/> Other Asian	<input type="checkbox"/> Asian	other
<input type="checkbox"/> Other Pacific Islander	<input type="checkbox"/> Native Hawaiian or Other Pacific Islander	Other Pacific Islander
<input type="checkbox"/> Samoan	<input type="checkbox"/> Native Hawaiian or Other Pacific Islander	Samoan
<input type="checkbox"/> Unknown/Race not mapped	<input type="checkbox"/> unknown	unknown
<input type="checkbox"/> Unreported/Refused to report	<input type="checkbox"/> asked but unknown	asked but unknown
<input type="checkbox"/> Vietnamese	<input type="checkbox"/> Asian	Vietnamese
<input type="checkbox"/> White/Caucasian	<input type="checkbox"/> White	other
<input type="checkbox"/> (blank)	<input type="checkbox"/> (blank)	(blank)
Grand Total		

PivotTable Fields

Choose fields to add to report:

- Race
- UDS+ race
- UDS+ race code
- UDS+ race code system
- UDS+ detailed race
- UDS+ detailed race code
- UDS+ detailed race code system
- Ethnicity
- UDS+ ethnicity
- UDS+ ethnicity code
- UDS+ detailed ethnicity
- UDS+ detailed ethnicity code

Do you see any categories that warrant additional investigation/confirmation?



3. Mapping of EHR categories to UDS+ Categories

Race	UDS+ race	UDS+ detailed race
<input type="checkbox"/> American Indian/Alaska Native	<input type="checkbox"/> American Indian or Alaska Native	Alaska Native
<input type="checkbox"/> Asian	<input type="checkbox"/> Asian	other
<input type="checkbox"/> Asian Indian	<input type="checkbox"/> Asian	other
<input type="checkbox"/> Black/African American	<input type="checkbox"/> Black or African American	Black
<input type="checkbox"/> Chinese	<input type="checkbox"/> Asian	Chinese
<input type="checkbox"/> Filipino	<input type="checkbox"/> Asian	Filipino
<input type="checkbox"/> Guamanian or Chamorro	<input type="checkbox"/> Native Hawaiian or Other Pacific Islander	Chamorro
<input type="checkbox"/> Japanese	<input type="checkbox"/> Asian	Japanese
<input type="checkbox"/> Korean	<input type="checkbox"/> Asian	Korean
<input type="checkbox"/> More than one race	<input type="checkbox"/> Other Race	other
<input type="checkbox"/> Native Hawaiian	<input type="checkbox"/> Native Hawaiian or Other Pacific Islander	Native Hawaiian
<input type="checkbox"/> Other Asian	<input type="checkbox"/> Asian	other
<input type="checkbox"/> Other Pacific Islander	<input type="checkbox"/> Native Hawaiian or Other Pacific Islander	Other Pacific Islander
<input type="checkbox"/> Samoan	<input type="checkbox"/> Native Hawaiian or Other Pacific Islander	Samoan
<input type="checkbox"/> Unknown/Race not mapped	<input type="checkbox"/> unknown	unknown
<input type="checkbox"/> Unreported/Refused to report	<input type="checkbox"/> asked but unknown	asked but unknown
<input type="checkbox"/> Vietnamese	<input type="checkbox"/> Asian	Vietnamese
<input type="checkbox"/> White/Caucasian	<input type="checkbox"/> White	other
<input type="checkbox"/> (blank)	<input type="checkbox"/> (blank)	(blank)
Grand Total		



4. Comparing Numbers With Other Sources

Patients in this year's UDS+ must have a UDS Visit. Compare (ballpark) to the Visit Calendar or to the UDS Module

Relevant says "HRSA's technical guidance for UDS+ is incomplete or diverges from the UDS Manual, causing mismatches in the numbers" (from the UDS+ FAQ)

Resource	Number of lines
Patients Provides demographic data about each UDS patient, including age, race, ethnicity, gender identity, housing status, veteran status, etc. The data points roughly correspond to the ZIP Codes Table, Table 3A, Table 3B, and Table 4. Most other UDS+ resources reference these patient records. Mapping details	13,837

COMPARE

Visit Calendar

UDS visits



May not be *exactly* the same, but rather ballpark



4. Comparing Numbers With Other Sources

Some tables should have the same number of patients because they display one record per patient. These are:

- Patients
- Coverages
- Sexual Orientation Observations
- Patient Reporting Parameters



4. Comparing Numbers With Other Sources

Two Resources list health center data references:

- 1. Location:** Check that the number of locations is correct, along with location names and whether they are public housing sites or school sites (as applicable to how you report on the legacy report)
- 2. Payers:** Check the number of insurance reported and the mapping of the columns into UDS+ categories based on your knowledge of appropriate mapping

Note: you can obtain the count of individual locations and payers for patients with a UDS Visit in the Relevant Visit Calendar



UDS visits



VISIT COUNTS BY LOCATION ▾

VISIT COUNTS BY PRIMARY PAYER ▾



5. Line-Level Patient Audit

- Check the line-level data in the EHR for randomly selected specific patients
- Check the line-level data in the EHR for records that display data categories like Unreported, Unknown or that appear to have an Error or are Blank (when data is expected)



1. Does anybody who worked on the 2023 UDS+ have any additional tips/suggestions?
2. Other questions?



Thanks for joining!