□ Clinical Data Pull from EHR

> To utilize the Clinical Data Pull (CDP) for a REDCap project, please contact your REDCap administrator regarding the process entailed and procedures required in order to have the CDP enabled for the project and also for an individual to be given authorization to use the CDP.

What is 'Clinical Data Pull' (CDP)?

Clinical Data Pull is a special feature for importing data into REDCap from an EHR (electronic health record system), such as Epic, Cerner, etc. It provides an adjudication process whereby REDCap users can approve all incoming data from the EHR before it is officially saved in their REDCap project. Clinical Data Pull can only be enabled by a REDCap Administrator, so you should contact them if you wish to utilize Clinical Data Pull for this project.

How 'Clinical Data Pull' works

Clinical Data Pull can fetch data from the EHR system both manually in real time and automatically at a regular interval. From theEHR interface, Clinical Data Pull can create new records in a CDP-enabled REDCap project. Additionally, if a user knows the patient identifier (e.g., medical record number), then they could optionally enter the MRN for a record in a CDP-enabled REDCap project, after which it will then go and immediately retrieve the patient data from the EHR in real time.

Enabling the feature

After a REDCap administrator has enabled the CDP for your REDCap project, the administrator can then give any user in the project access to the CDP (assuming the user has been authorized to access source system data), in which the user can be given user privileges to perform the mapping/setup process and/or to adjudicate/import data from the source system. Only an administrator can grant individuals access to begin utilizing the CDP. After being granted access to the CDP, the user will then see the CDP step on the Project Setup page where they can navigateto the CDP mapping/setup page, which allows the user to map fields already created in their REDCap project to fields from the external sourcesystem. This mapping allows REDCap to know how where to put the data when importing it from the external system.

The field mapping process

A user on the mapping/setup page can choose any available fields from the external source system to map to one of their REDCap projects fields. (Note: This assumes that the user has already created their data collection instruments and fields in their project.) There are two types of fields that may be mapped: 1) one-time data fields, and 2) temporal data fields. One-time data fields are those where data will only be stored one time in the source system, such as demography data. Conversely, temporal data fields are those where data may be collected manytimes over a period (e.g., labs, vitals, any kind of longitudinal data). When mapping temporal fields, you must also specify a REDCap date/datetime field that will be used for determining the window of time in which it should look when fetching data from the source system. It will determine the window of time in conjunction with the day offset value defined on the mapping page. For example, if the value of the mapped REDCap date/datetime field is 2001-11-29 and the day offset is 1 day, it will query the source system and return only data saved for the field from 2001-11-28 until 2001-11-30. Any source data outside of that range will be ignored during the adjudication process. It is important to note that the source data for a temporal field will NOT be fetched from the external source system UNLESS its associated REDCapdate/datetime field has a value. Once a value is entered for the associated date/datetime field, source data will then be fetched for that

temporal field.

There are a few demography fields (race, sex, and ethnicity) that, if used in a project, are required to have their choices coded a very specificway. Listed below are the coding's that should be used for these fields.

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gender
F, Female
M, Male
UNK, Unknown
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ethnicity
2135-2, Hispanic or Latino
2186-5, Not Hispanic or Latino
2137-8, Spaniard
2148-5, Mexican
2155-0, Central American
2165-9, South American
2178-2, Latin American
2180-8, Puerto Rican
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race
1002-5, American Indian/Alaska Native
2028-9, Asian
2076-8, Native Hawaiian or Other Pacific Islander
2054-5, Black or African American
2106-3, White
1004-1, American Indian
1735-0, Alaska Native
1006-6, Abenaki
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Preview fields (optional)
On the mapping/setup page, you may choose up to 5 source fields to be used as 'preview fields'. Preview fields are optional and are typically used to confirm that the record identifier (e.g., medical record number) that was entered is correct by displaying other contextual data from thesource system. For example, if you have 'last name' and 'date of birth' as source fields, you may choose them to be preview fields in your project, and thus when a value is entered in REDCap as the record identifier, if will then fetch and display the last name and date of birth of theperson to validate their identity. If preview fields are not utilized, it is possible that incorrect source data is imported. Thus, preview fields are not required but are recommended for data quality purposes.

The adjudication processes
After the mapping process has been completed, data from the external source system will not be imported automatically into the REDCap project, but instead it requires that a person view and adjudicate each data item from the source system before being imported into the project. The

adjudication screen can be accessed from either of two places: 1) on the Record Status Dashboard, and 2) on the data entry form

when viewing a record. The Record Status Dashboard will display a new table column with a count of any new items from the source system for each record displayed. Clicking on the count will open the adjudication screen for that record. Alternatively, when viewing a record on a data entry form, the count of new items from the source system will be displayed at the top of the page in red box, in which clicking the View button will open the adjudication screen. On the adjudication screen, it will display all data from the source system that has not been adjudicated yet. **If only a single source value has been returned for a REDCap field, it will automatically pre-select that item for you. If the field is a temporal data field that has multiple values returned, it will automatically pre-select the data value *ONLY IF* that value is the only value returned that occurs on the exact same calendar date as the REDCap date/datetime value (that is, unless a pre-selection option - e.g., Minimum value, Latest value - has already been set for that field on the mapping page).** The user must viewall the items on the adjudication screen and select the radio button next to each to denote the source value they wish to import. Once all values have been selected, clicking the Save button will import the value into the project. If some items were left and were not adjudicated, theuser can return at any time to adjudicate them in the future.