

CalREDIE Auto-Processing Overview

Background

When electronic laboratory reports (ELR) are submitted by a laboratory, they go into the Disease Incident Staging Area (DISA) within CalREDIE. Local users will use the DISA to review and handle ELR results. Within the DISA, **local users will manually review each lab result** and determine how to act upon the result. In most instances, the local user will choose to import the ELR result into the CalREDIE master person index, either attaching the result to an existing disease incident, creating a new disease incident for an existing person, or creating a new person and new disease incident.

Within CalREDIE, it is possible to “turn-on” what is called Auto-processing. Auto-processing means that the ELR result bypasses the DISA and goes directly into the CalREDIE master person index (MPI). As part of auto-processing, CalREDIE will match incoming ELR results with existing persons and incidents in the MPI (see below for more details). This means that local users do not need to manually review these results in the DISA.

One of the strengths of CalREDIE is that the auto-processing functionality is configurable. This means that we can control how the auto-processing works. There are three ways in which auto-processing can be configured:

1. *Disease* – we can select which diseases are auto-processed.
2. *Process Status* – for each disease that is auto-processed, we can select the Process Status that will automatically be selected as part of the auto-processing. Options to which the Process Status can be automatically set include “Entered”, “Closed by LHD” or “Closed by State”. If the selected Process Status is the last Process Status of the workflow (“Closed by LHD” or “Closed by State”), the disease incident will automatically become closed.
3. *Resolution Status* – there are two options for which the Resolution Status can be automatically set – “Suspect” or “Confirmed”.

Examples of Auto-processing Configurations:

- Auto-process Chlamydia and HCV so that the Process Status is set to “Closed by LHD” and the Resolution Status is set to “Confirmed”.
- Auto-process Gonorrhea so that the Process Status is set to “Entered” and the Resolution Status is set to “Suspect”.

Main Points to Understand About Auto-processing

- Auto-processing is NOT configurable by jurisdiction. Results cannot be auto-processed in one jurisdiction and not auto-processed in another.
- Auto-processing is configurable by disease.
- The Process Status and Resolution Status can be automatically assigned.
- Auto-processing reduces the number of results the local user must review in the DISA.
- Anything that is auto-processed can easily be accessed in the CalREDIE MPI, regardless of the Process Status or Resolution Status that is assigned. For example, if CalREDIE is configured to auto-process chlamydia lab results and set the Process Status to “Closed by LHD”, the local user can always access the incident and re-open it if needed.
- Jurisdictions will be able to use the Data Distribution Portal to generate reports specific to auto-processing. Reports could be generated showing all cases that have been auto-processed or for only those cases to be re-opened (while the rest remain closed). For example, a jurisdiction could generate a report of all new HBV labs for females of child-bearing age and only follow-up on those cases.

Matching ELR results to existing persons in CalREDIE

CalREDIE uses an algorithm to identify matches in the master person index. There are two levels of matching:

Patient Matching – Patient matching matches the *person* in the ELR result with the *person* in CalREDIE:

- Medical Record Number + Reporting Laboratory + Gender
- Social Security Number + DOB + Gender
- Last Name + First Name + DOB + Gender

If any of the three rules are met, CalREDIE assumes a match and moves on to the next level of matching (see below). If CalREDIE does not find a match a new person with a disease incident is created.

In addition to the three patient matching rules listed above, we also have the ability to write our own rules using combinations of the variables below. At this time, we have not written additional patient matching rules. However, we will be working in the coming 1-2 months to test and validate the sensitivity and specificity of CalREDIE’s patient matching algorithm.

- Date of Birth
- First Initial
- First Name
- Gender
- Last Name
- Medical Record Number
- Social Security Number

Disease Incident Matching – After the person has been matched, CalREDIE will look to see if there is a disease incident match. If there is a disease incident match, CalREDIE will attach the ELR result to the existing incident. If there is no disease incident match, CalREDIE will create a new disease incident.

The way that the disease incident matching is done is configurable; we can write our own combination of rules using the variables below.

- Diagnosis Date
- Diagnosis Date Within 31 Days
- Disease
- Jurisdiction
- Reporting Source Provider ID
- Reporting Source Provider Name
- Specimen Collection Date
- Specimen Collection Date Within 31 Days

At this time, we have written one disease matching rule:

Disease + Jurisdiction + Specimen Collection Date within 31 Days

During the course of piloting and rolling out ELR, we will work with CDPH subject matter experts and CACDC to determine whether additional disease matching rules are needed.