

CalREDIE - The Communicable Disease Surveillance System for California

An Overview

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What is CalREDIE

The California Reportable Disease Information Exchange (CalREDIE) is a PHIN*-compliant application for electronic disease surveillance and reporting. The CalREDIE system is utilized by six branches within the Division of Communicable Disease Control (DCDC) at the California Department of Public Health (CDPH), Local Health Departments (LHDs), health care providers, and later this year both public and private laboratories within California. Nearly all reportable communicable diseases and outbreaks in California can be reported through the CalREDIE system. The CalREDIE system allows for real-time reporting and receipt of notifiable conditions. CalREDIE has already improved and will continue to improve the efficiency of surveillance and the early detection of outbreaks through the collection of more timely and complete surveillance throughout the state.

Mission

CalREDIE is a system designed to improve the efficiency of surveillance activities and the early detection of public health events through the collection of more accurate and timely surveillance information. It will maximize prevention efforts by allowing public health information to be tracked and analyzed by the Division of Communicable Disease Control (DCDC) and LHDs.

Vision

Before the implementation of CalREDIE LHDs used to maintain various methods for conducting public health surveillance, however, these methods were designed independently and in many cases were not able to share data. The long-term vision for CalREDIE that drove its development and implementation was the following:

- Integrate all surveillance activities to gather and share data from a variety of sources on a real-time basis
- Facilitate the monitoring of community health
- Assist in the ongoing analysis of trends and detection of emerging public health threats
- Provide information for setting public health policy

With CalREDIE's improved communication, reliable information and automatic data exchange, LHDs and other key stakeholders have timely and accurate insight into the state of their communities' health.

*PHIN – Public Health Information Network, a national initiative to increase the capacity for public health agencies to exchange data electronically, through the promotion of standards and requirements for public health information exchange.

Integrity improved The quality of the surveillance information collected within CalREDIE is improved over the pre-CalREDIE data. Configuration of CalREDIE allowed CDPH to review, refine, and modify case reports into standardized forms, to achieve consistency in the data collection process. CalREDIE also reduces the instances of duplicate reports, through system functionality. CalREDIE meets federal and state security and privacy standards.

The Master Person Index (MPI) is the listing of people – both cases and contacts – within CalREDIE and their associated disease conditions. The MPI is what makes CalREDIE a person-centric system. With the MPI, now we can see a person’s incident history over time meaning that we can track co-infections that a given individual who was just diagnosed with Salmonella had Chlamydia two years ago. We can also view the relationships between cases and contacts.

Shared system Since CalREDIE is a single, centralized application that LHD and CDPH staff can access simultaneously, State and local staff can collaborate on an investigation, both accessing the same record, with the same information, at the same time – eliminating the need to email or fax case report information. This also means that the surveillance data that CDPH reviews and analyzes is real-time (prior to the implementation of CalREDIE, LHDs submitted data, based on closed, completed investigations to CDPH on a weekly basis); now CDPH has access to the case counts in real-time for the LHDs using CalREDIE.

Built with an end user in mind CalREDIE was designed to mirror the existing LHD reporting structures and processes. The system was intended to allow users to do what they feel is best with respect to entry of information for reporting and data management purposes.

An important consideration that drove our approach to configuring the system was to minimize the extent of change that LHDs would have to make to their existing processes. The system was designed to allow each community of users to utilize it in the manner they feel is best; in other words, to allow our users to follow the processes that they are used to. Some LHDs have chose to only perform electronic data entry related to the CMR component of the cases, while others chose to enter complete case report data on all reportable diseases, and some chose to combine these two approaches.

From Data to Information Ultimately, CalREDIE was designed as an epidemiologic tool, and once it is fully configured, users will have sophisticated and advanced capabilities at their fingertips for data analysis. For example, the users are able to manipulate data in order to find correlations, define trends, and describe populations with rates and charts. With a few more clicks of the mouse, users can generate a series of detailed reports on any of the cases in the database. CalREDIE has increased accessibility and usefulness of data collected at local and state levels within confidentiality constraints.

CalREDIE components



Core
CalREDIE

CalREDIE allows users to handle their communicable disease epidemiology, data sharing and reporting functions and it has tremendous flexibility to expand its capabilities beyond that. We have built into CalREDIE a number of critical modules. At the core of CalREDIE is the electronic [system for communicable disease tracking, reporting and case management](#). Its main objective is to make disease reporting, investigation and tracking more efficient for LHDs. CalREDIE automates the reporting process by eliminating the need to send data to CDPH, because of the shared, centralized database.

ELR

An important component of CalREDIE is the [Electronic Lab Reporting \(ELR\)](#) module. This module is the necessary first step in accepting, managing and viewing laboratory results in CalREDIE. ELR enables CalREDIE to receive HL7 results from laboratories and imports those results into the CalREDIE database. Over the last year these three factors helped us get ELR moving—(1) Health and Safety Code 120130(g) as modified by AB 2658 (2008) requires electronic reporting of lab results suggestive of disease, (2) Meaningful use incentives for electronic lab reporting to public health, and (3) CalREDIE is currently ready and able to handle incoming reports. Currently we are receiving live data from three national labs (LabCorp, ARUP and Mayo) into an ELR test environment. Over 60 hospitals are enrolled and engaged at various points in their ELR message testing progression. LHD staff may need to adjust current business processes in order to adapt to differences in the way that information is received from the labs. Going forward, the burden of data entry from faxed lab reports should diminish greatly. The workload is shifting from the fax machine and lab data entry to the CalREDIE Disease Incident Staging Area (DISA), where LHD staff will handle incoming lab reports.

PP

In addition to ELR, CalREDIE allows for the direct web-entry of Confidential Morbidity Reports (CMRs) by the providers, through the configurable [Provider Portal \(PP\)](#) module, which allows for real-time receipt and processing by the LHDs. Currently, there are about 1000 providers from 24 LHDs reporting into CalREDIE. This year, we aim to have every LHD using CalREDIE with at least 1 provider reporting via CalREDIE. In addition to the increase in timeliness of reporting, implementation of the PP reduces the burden of data entry at the local level since the providers are entering the data themselves.

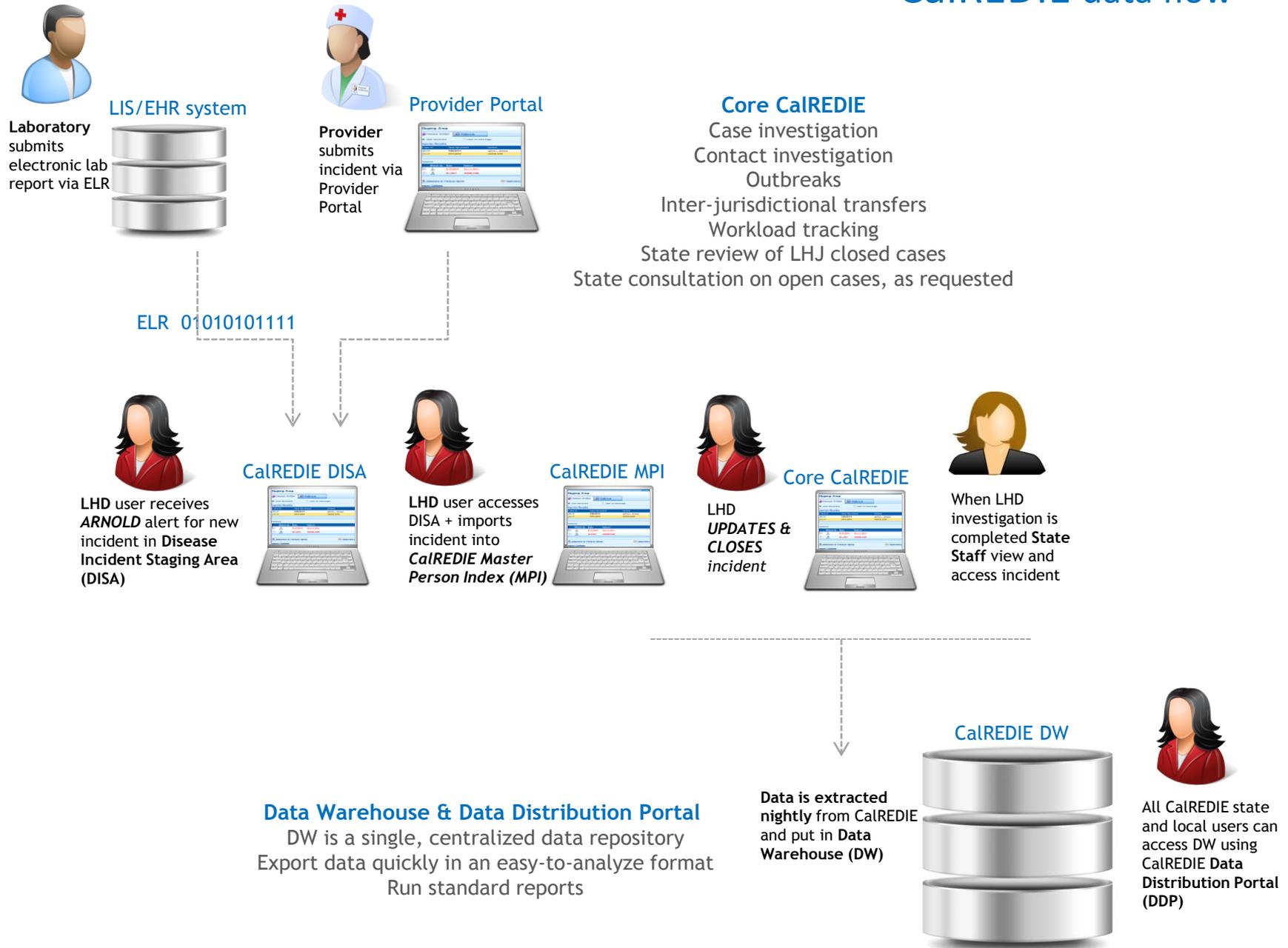
DDP

The [Data Distribution Portal \(DDP\)](#) is a web-based report and export solution for the CalREDIE system. The goal of the DDP is to give CalREDIE users access to data and reports in a user-friendly format. The DDP will give users access to CalREDIE data in different formats - either download their data in a user-friendly format or view available reports. DDP reports can range from simple, static (canned) reports with tabular information, to complex cross-tabular reports with charts and graphics. Interactive charts with drill-down capabilities are also possible.

ARNOLD

[Advanced Results Notification and Online Delivery \(ARNOLD\)](#) is the alerting and notification module available to all state and local CalREDIE users. With this module, users can sign up to receive email alerts when certain events happen within CalREDIE. Users select the criteria on which they want to be notified, and when those conditions are met in the system, CalREDIE will send an email notification with a link to the specified incident. For example, a user could choose to receive an alert any time an incident of Influenza is submitted via the PP or anytime a new incident of Anthrax is entered.

CalREDIE data flow



Interested in CalREDIE ?
review [CalREDIE Newsletter, Spring 2013](#)
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