California electronic case reporting hold queue mitigates volume

CSTE Stories FROM THE Field

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CATEGORY: **Epidemiology and Laboratory Capacity (ELC)** | CATEGORY: **Electronic Case Reporting**

To manage electronic initial case reporting (eICR) volume, for which as many as 15 reports are generated for a single case, California Department of Public Health (CDPH) developed a hold queue. This queue holds messages for 10 minutes and then sends only the latest version of the message, reducing eICR volume by about 18%.

The "What"

As a patient's encounter is updated by their care team in clinical care, the electronic health record (EHR) may generate and send multiple electronic initial case report (eICR) messages to public health for the same patient encounter. These are not duplicate messages; however, the updates may not be pertinent for public health purposes. There are currently recommended guidelines for triggering eICRs within the EHR but there are no required trigger timing parameters set for EHR vendors, which pose concerns for the data receivers around the timeliness and volume of messages received. The potential

to receive many eICR messages for a single encounter can affect the workflow of our downstream users. Each eICR will have different Document IDs, but they should share the same encompassing encounter helping us link the related documents using setID and version number. The California Department of Public Health (CDPH) developed a hold queue in Rhapsody to mitigate the volume of eICRs per encounter for our users.

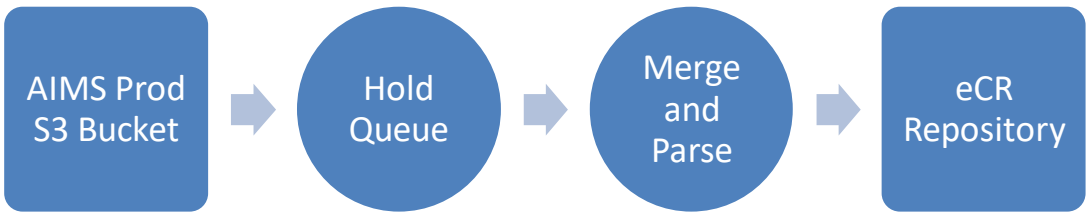

Figure 1. Hold queue in the eCR Rhapsody route

CDPH's hold queue logic holds incoming eICR documents for 10 minutes once received by our Rhapsody communication point. After 10 minutes, only the latest version of that eICR for a patient is passed along to the surveillance system for consumption. When multiple documents are received for the same patient WITHIN the hold queue window, only the most recent one is passed on to the surveillance system. When multiple documents are received for the same patient OUTSIDE the hold queue window, only the most recent from EACH hold queue window are passed on to the surveillance system.

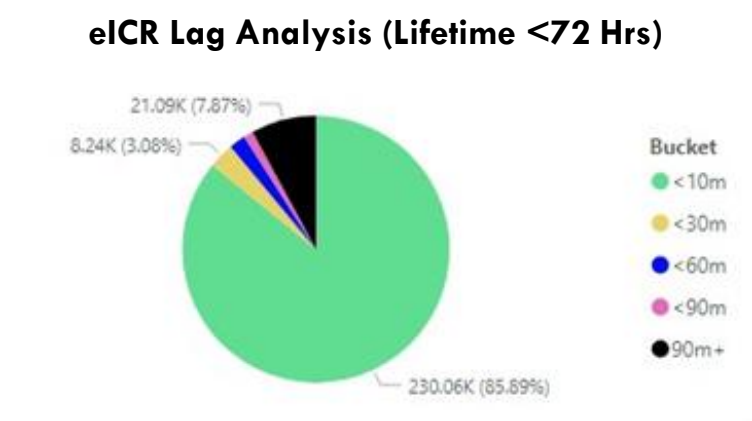

Figure 2. Interval analysis of messages within hold queue time frame

The hold queue reduced the volume of eICRs by approximately 18%

The "So What"

This is a new process and has already decreased the volume of messages for our surveillance system to process and our downstream users to review. We reviewed production data from June 20, 2023 to October 5, 2023 and found that the hold queue reduced the volume of eICRs by approx. 18%. We observed that incoming eICRs had as many as 15 versions from a single encounter. Among these versions, we anticipate that only 1-2 versions per encounter would then be processed to production based on the timeframe in which they were received. Interval analysis identified that 86% of messages are received for an encounter within the 10-minute time frame, which makes us confident in the time limit we've set for now.

The "Now What"

Healthcare organizations have been triggering on COVID-19 and mpox up until very recently. As eCR expands to include all reportable conditions, we expect utilization of the hold queue to be even more of a significant tool to streamline workflow and surveillance processing. Our next steps are to add the disease condition codes to the hold queue so that we'll be able to assess volume and behavior by disease.

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