



Emanate Health Advances COVID-19 Contact Tracing With MEDITECH

Introduction

As instances of COVID-19 within the San Gabriel Valley community began to rise in 2020, effective and efficient contact tracing was essential to identify possible opportunities for exposure between staff and patients. Collaborating with MEDITECH helped Emanate Health to quickly develop contact tracing dashboards in its MEDITECH Expanse EHR. The organization's initial goal was to identify patients and staff at high risk for COVID-19 exposure as a result of an inpatient becoming positive with the virus during their hospital stay.

The following process helped Emanate Health achieve its goal:

- Understanding the exposure window
- Identifying at-risk patients and hospital staff
- Prioritizing COVID-19 cases that have high-risk exposure events.

SNAPSHOT

Profile

While serving its community in Covina, CA, for almost 100 years, **Emanate Health** has grown to become the largest nonprofit health care provider in California's San Gabriel Valley. More than 1 million people receive care within this 625-bed network, which includes four facilities: **Emanate Health Queen of the Valley Hospital** in West Covina, **Emanate Health Inter-Community Hospital in Covina**, **Foothill Presbyterian Hospital** in Glendora, and Emanate Health Home Care and Hospice in West Covina, as well as a network of **more than 16 primary and specialty care locations**.

Understanding the exposure window

Information released by the CDC defining the exposure window for COVID-19 served as guidance for Emanate Health to determine which metrics to include when creating its dashboards. These metrics included visit start date, positive or negative test result, positive collection date, and positive result date. An additional value was calculated outlining the period of time that had elapsed from when the patient was admitted, to when the positive result was identified.



Identifying patients with COVID-19 and at-risk staff

All patients coming into the hospital for any reason were screened and tested for COVID-19 upon arrival. Out of more than 51,000 tests, just over 7,000 patients were treated for the virus. Patients with a positive test result who were not in isolation were prioritized by the Infection Control team, based on the amount of time elapsed between the date and time of admission to when the positive test collection occurred. Next, the patient's EHR was updated to document an exposure event requiring isolation and PPE. The patient's ID along with the dates of exposure risk were forwarded to Emanate Health's Employee Health Department to notify all department managers via email with a list of dates and locations of interest to help identify staff who may have been exposed. After evaluating staff shifts and locations, a list of staff members potentially exposed to the virus was provided to Employee Health for employee notification to ensure the appropriate follow-up occurred.

Opportunity

Preventing the spread of COVID-19 has been among the most significant challenges facing healthcare providers during the pandemic. Evidence shows that contact tracing to identify people who may have been exposed to an infected person is one of the keys to slowing down transmission. During the height of the pandemic, **Emanate Health** continued to serve its community at the highest level by implementing a reliable and efficient system to conduct contact tracing among staff and patients.

Solution

Emanate Health collaborated with MEDITECH to leverage BCA dashboards within MEDITECH Expanse — integrating data from other vendor sources — to customize an automated contact tracing program. Disease investigation and contact tracing dashboards identified patients and staff with high risk exposure to inpatients testing positive for the virus.

Benefits

- Ability to identify high-risk exposure events based on the exposure window
- Accurate prioritization of COVID-19 cases identified as coming from high-risk exposure events
- Ability to identify at-risk patients and hospital staff to minimize the ongoing spread of the virus.



Addressing positive test results

When a patient tested positive for COVID-19, Emanate Health staff used their MEDITECH EHR to evaluate exposure risk by identifying the following:

- Possible roommates using the location history
- Care team interactions using EHR documentation logs
- Staff on each shift based on location history, along with shift assignments.

“When I used the EHR to identify roommates who may have been exposed to the virus, it only took me three clicks to see a COVID-19 inpatient who stayed here a total of three weeks. I quickly found everyone who shared a room with this patient,” said Emanate Health’s Corporate Director of Infection Control Loucine Kasparian. “Using our prior process, it would have been much more time consuming. I would have had to contact the unit directors to provide the list of every patient for every day to find that information.”

When a hospital staff member tests positive for COVID-19, the MEDITECH system is used to check for assigned patients based on the EHR interactions. Shift assignments are also confirmed by leveraging the HIPAA audit log based on the

EHR user. Every chart edited during the workday is checked because the summation of these edits shows the names of all of their assigned patients.

By using another vendor’s time and attendance data to compare the date and location of staff shifts, other staff members who interacted with the infected person are easily identified. Integrating this external data into the MEDITECH EHR has proven to be a huge asset of MEDITECH’s Business and Clinical Analytics solution during the pandemic.

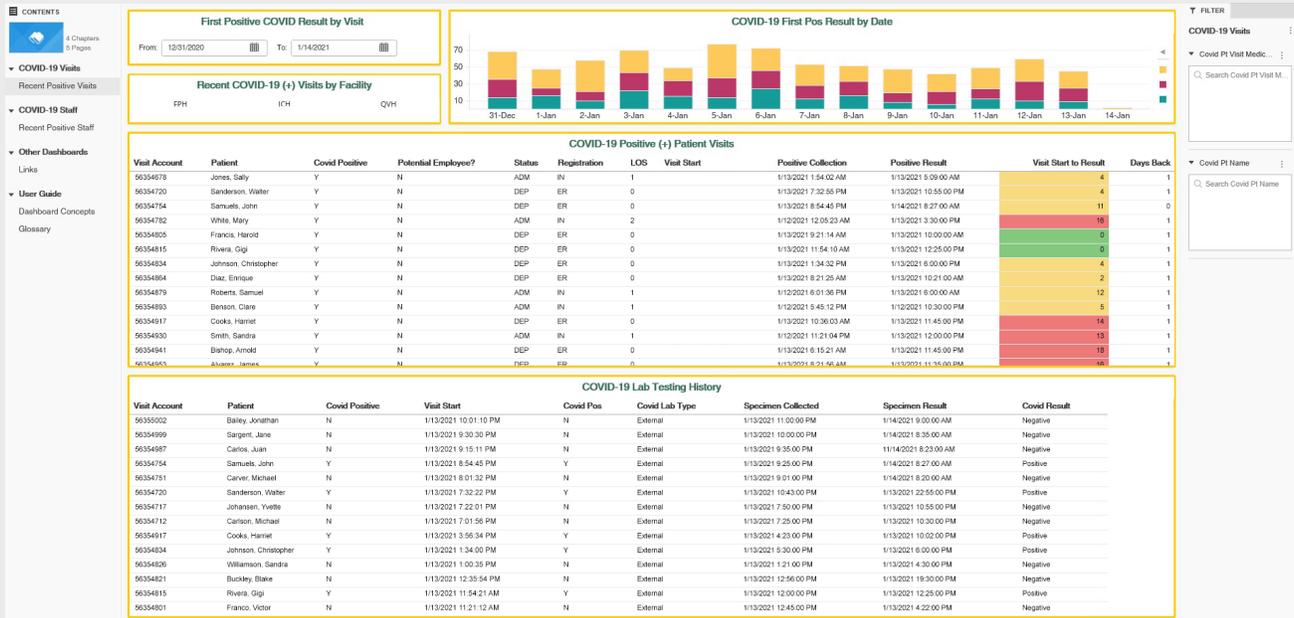
Taking a deeper dive into possible exposures

Staff infections represent a huge challenge in that a single infection can give rise to a cluster of infections among both patients and other staff. This spread requires additional investigation to prevent the infection from propagating further. To address this concern, Emanate Health used MEDITECH Expanse to create a BCA dashboard that could accommodate the complexity of serial transmission along with the breadth to investigate exposure over time.

“With our Contact Tracing Dashboard, we made a unique record that’s specially made based on our EHR and how we work,” said Kasparian.

Emanate Health collaborated with MEDITECH to create a total of five BCA dashboards, based on four datasets to conduct COVID-19 exposure investigation.

Their analysis of patient location history identifies roommates who may have been exposed, employees who may be at high risk for exposure, and patients who are also employees.



Analysis Type

Data Description

Exposure Risk

Leverages the COVID-19 work table provided by Emanate Health to provide insight into all positive patients by facility. It was further enhanced to visually indicate patients who may also be employees. This dashboard can be used daily by Infection Control and Employee Health to review all recent COVID-19 positive results.

Patient-to-Staff & Staff-to-Patient Transmission

The patient-to-staff dashboard is used when a patient tests positive for COVID-19. EHR user audit logs provide insight into every staff member who modified, viewed, printed, or exported data from the patient's chart — actions that indicate possible contact. A list of potentially exposed employees can be shared with Employee Health requiring follow-up. The staff-to-patient dashboard can be used when employees test positive as a patient or self-report a positive result from a facility outside of Emanate Health.

Patient-to-Patient Transmission

Includes room/location tables to allow identification of all patients who were in the same room/location as a COVID-19 positive patient.

Staff Location

Integrates employee scheduling data from Kronos to list all staff who were scheduled to work in the same location as a COVID-19 positive patient or employee.

Reaping the benefits of dashboards and next steps

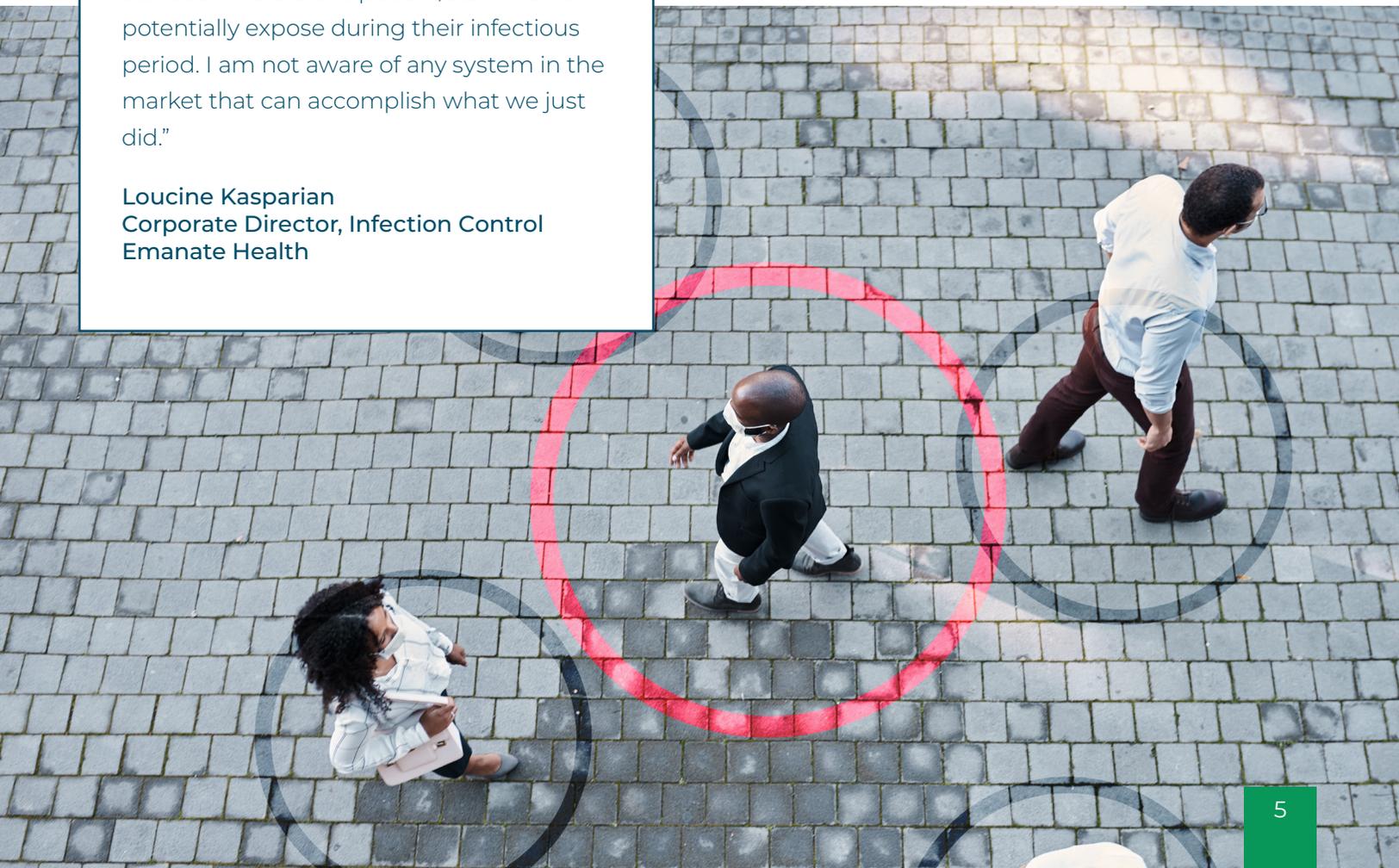
Based on its success with using BCA dashboards for COVID-19, Emanate Health is currently evaluating workflow changes to incorporate dashboards into daily operational use by Infection Control and Employee Health to investigate other infectious diseases and perform similar contact tracing. The organization also plans to evaluate rolling out dashboards beyond Infection Control and Employee Health to address other use cases.

“We can identify not just the source of COVID-19 infection — who did this patient/ staff member likely get the virus from — but also who did the patient/staff member potentially expose during their infectious period. I am not aware of any system in the market that can accomplish what we just did.”

Loucine Kasparian
Corporate Director, Infection Control
Emanate Health

Use BCA dashboards to trace and track other infectious diseases including:

- C. difficile
- Methicillin-resistant Staphylococcus aureus (MRSA)
- Vancomycin-resistant Enterococcus (VRE)
- Influenza
- Meningitis
- Tuberculosis
- Measles





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