

# Impact of a Customized Travel and Exposure Screening Tool During the COVID-19 Pandemic

Grayson Privette, MPH CIC LSSGB<sup>1</sup> Jennifer Osborne, MSN, RN<sup>2</sup> Karen Keough<sup>3</sup> Eimear Kitt, MBBCh BAO (Hons) FAAP<sup>1,4</sup> Julia S. Sammons, MD MSCE<sup>1,4</sup> Emma Paras, MPH CEM CHEP MEP<sup>5</sup> Kristen Nelson MBA<sup>2</sup> Eric Shelov, MD<sup>6</sup> and Lori K. Handy, MD, MSCE<sup>1,4</sup>

<sup>1</sup>Department of Infection Prevention and Control, The Children's Hospital of Philadelphia (CHOP); <sup>2</sup> Center for Healthcare Quality & Analytics, CHOP; <sup>3</sup> Information Services, CHOP; <sup>4</sup> Department of Pediatrics, Division of Infectious Diseases, Perelman School of Medicine, University of Pennsylvania; <sup>5</sup> Emergency Preparedness, CHOP; <sup>6</sup> Department of Pediatrics, Division of General Pediatrics, Perelman School of Medicine, University of Pennsylvania, and Department of Biomedical and Health Informatics, CHOP

## BACKGROUND

Screening for communicable diseases at entry to any healthcare setting due to a patient's travel or exposure history is an important tenet of reducing transmission of pathogens among patients and healthcare providers. We recognized that the use of multiple screening tools across our enterprise led to inconsistent documentation by staff, unclear decision support, and an inability to rapidly update content.

## INTERVENTIONS

### Stakeholder Communication:

Engaged key stakeholders to discuss characteristics of an optimized screening tool

### Identify & Understand Current State Variation:

Process mapping of screening tools across the enterprise identified variation in decision support, content and communication of results

### Optimize Communication:

Strategized optimal messaging, prioritizing identification and isolation of high-risk patients/caregivers

### Explore & Review Tool Options:

Partnered with informatics team to identify options available in the EHR: built-in travel module vs. custom build with flowsheet details

### Iterative Updates & Revisions:

Built screening tool to facilitate regular modification in accordance with Federal, State and Local epidemiological updates & guidance

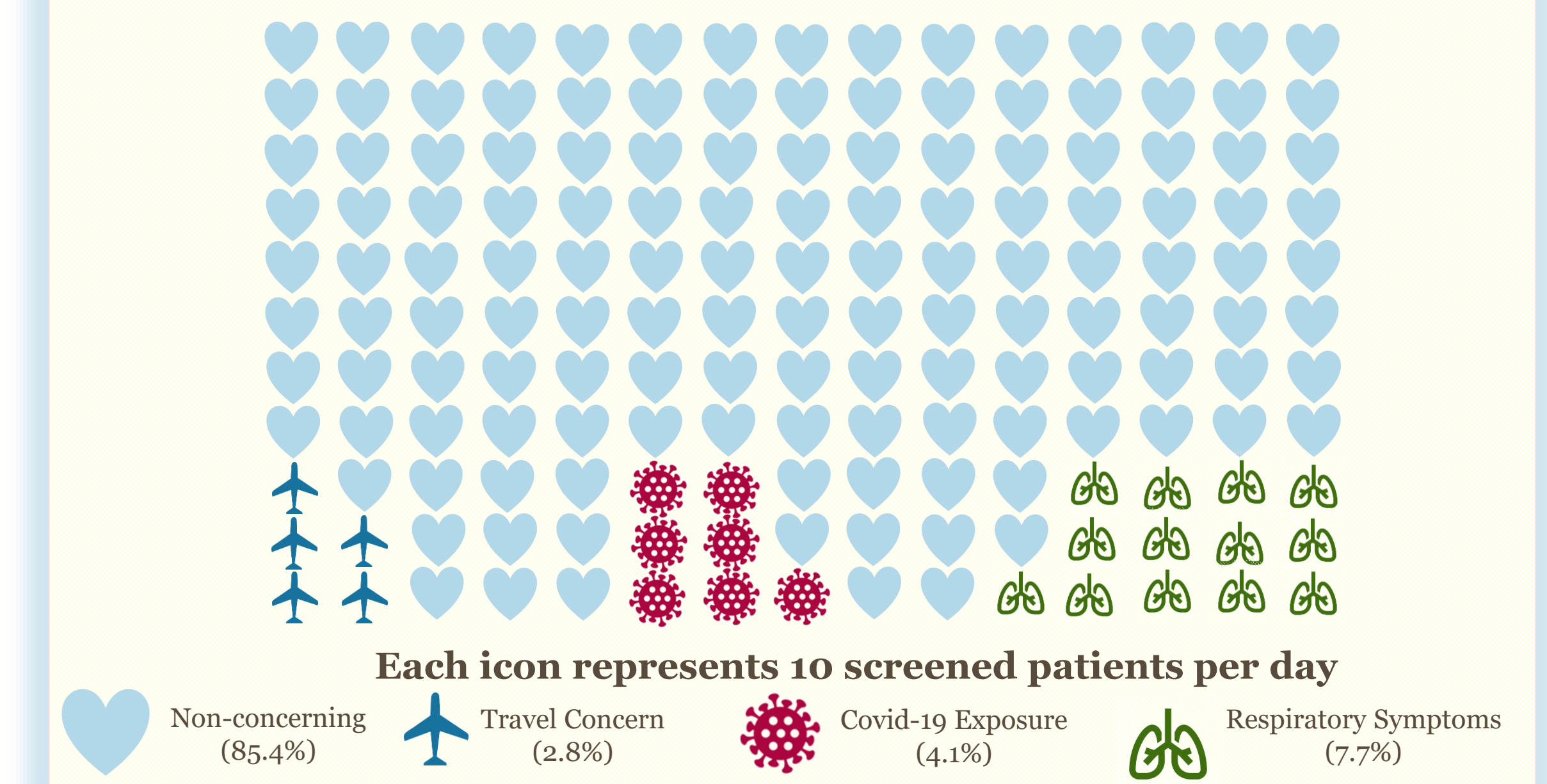
Global Aim

We aimed to improve the screening of all patients and caregivers across the CHOP network through the development of a customized modifiable screening tool to address high risk exposure threats and provide real-time screening data to our Department of Infection Prevention and Control, achieving greater than 99% screening compliance by February 2020

## OUTCOMES

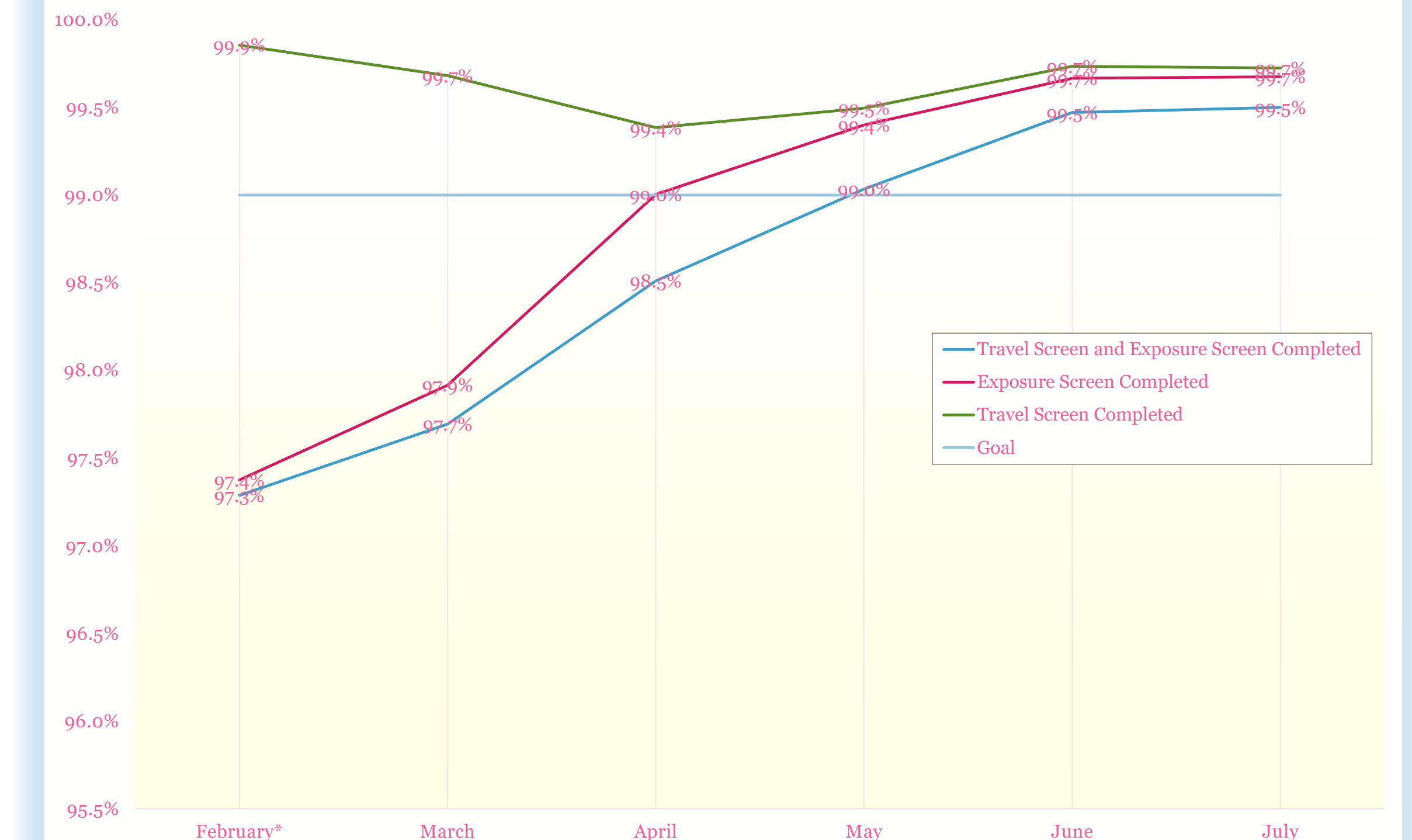
- Developed universal flowsheet to include travel, exposure, and symptom screening with decision support (Figure 1)
- During the period of peak local COVID-19 transmission, an average of 1644 patients were screened daily (Figure 2)
  - 2.8% screened positive for travel
    - 14.9% of those who traveled reported respiratory symptoms
  - 4.1% screened positive for COVID-19 exposure
  - 7.7% reported respiratory symptoms
- Compliance metrics have stabilized from launch date through July 30, at >99% (Figure 3)
- Screening is continually updated with identified locations of increased disease transmission

### Daily Average Travel and Exposure Screening Data During Peak Local COVID-19 Transmission †



**Figure 2.** Daily Average Travel & Exposure Screening Data. † Peak local COVID-19 transmission in the Philadelphia region defined as April 1<sup>st</sup> – May 30<sup>th</sup> 2020.

### Enterprise-wide Travel and Exposure Screening Compliance, 2020



**Figure 3.** Travel and exposure screening completion compliance metrics, all CHOP enterprise-wide encounters from January 31<sup>st</sup> – July 30<sup>th</sup>, 2020. \*Includes January 31<sup>st</sup> (launch date)

#### Concerning Travel

- Designed to identify patients and caregivers at risk for infection or exposure due to concerning travel
- Geographic areas of concern based on national, state, and institution-specific thresholds, reviewed weekly

#### Concerning Exposures

- Designed to identify patients and caregivers at risk for infection and isolate from waiting areas or public spaces
- Specifies several pathogens of concern, with a focus on higher-risk pediatric illnesses

#### Respiratory Symptoms of Concern

- Designed to identify patients and caregivers with symptoms of active respiratory infection
- Reminder to registration staff to direct patients/caregivers to use appropriate PPE in waiting area

**Travel Screen**

Has the patient or someone who lives with the patient traveled outside of the United States OR traveled within the United States to the state of Texas?  Yes  No  
No taken yesterday  
See the CDC website for known countries of outbreak: [CDC Travel notices](#)

---

**Exposures**

Has the patient, family member or close contact been diagnosed with or exposed to confirmed COVID-19 within the last 14 days OR measles, chickenpox, whooping cough within the last 30 days?  Measles  Chickenpox (varicella)  Whooping cough (pertussis)  2019 Novel Coronavirus (COVID-19)  None  
None taken yesterday

---

**Respiratory Screen**

Does the patient, or anyone with the patient, have cough, sneezing, or runny nose?  Yes  No  
No taken yesterday

**Figure 1.** Travel and exposures screening template in Electronic Medical Record.

## IMPACT

- Utilizing a custom-built flowsheet model in our EHR permitted real-time changes to screening to support best practice infection prevention measures
- Customizable travel and exposure screening is critical to identify patients with concern for COVID-19 and other emerging pathogens
- This travel, exposure and symptom screening model can serve as a template for other organizations with similar EHR functionality