

## The Academy COVID-19 Town Hall Series

# Technology Executive Groups Virtual Session | March 31, 2020

The following is a summary of key initiatives and questions raised across The Academy's COVID-19 Technology Executive Groups Virtual Session held on March 31, 2020. Please share your questions or comments with The Academy COVID-19 Taskforce at [covid19@hmacademy.com](mailto:covid19@hmacademy.com).

### Providence St. Joseph Health

Providence St. Joseph Health offers a comprehensive range of health and social services across Alaska, California, Montana, New Mexico, Oregon, Texas and Washington, with 119,000-plus caregivers/employees in 51 hospitals and more than 800 clinics.

**Tristan Markwell, Principal Strategic Scientist, Providence St. Joseph Health**, provided a summary of ongoing work from Providence's Office of COVID Analytics & Data (OCAD).

- Providence OCAD coordinates across Healthcare Intelligence, Clinical Analytics and Population Health Offices at the system level.
- Providence OCAD's current ongoing work related to COVID-19 includes:
  - Population Health modeling to determine risk of serious illness or mortality based on evidence-based criteria such as age, gender, comorbidities, smoking, pregnancy, homelessness, and additional factors. Confirmed COVID-19 cases as well as Persons Under Investigation (PUI) are actively integrated into OCAD's longitudinal patient tracker.
    - » Clinical data may be unstructured, especially for unconfirmed cases. Epidemiologic data related to COVID-19 disease progression and populations at risk is applied to all models.
  - Clinical Analytics modeling of likely COVID-19 cases using natural language processing (NLP) methods and applying regular expression (regex) tools.
    - » Virtual visits and phone calls are leveraged to capture relevant clinical data points as symptoms are reported.
    - » OCAD aims to provide analytics to inform an evidence-based approach to clinical decision-making for ED discharge, home care and ventilator allocation.
    - » Workforce and Human Resources implications, including modeling to better understand the number of medical staffing needs, will be necessary to effectively deliver staffing needs and implement a backfill strategy.
- Providence OCAD is currently completing data migration of existing work to the cloud solution, with a long-term focus on scalability.
- Providence OCAD is currently exploring the following bodies of work:
  - Data integration of patient GPS coordinates for hotspot identification, with the goal of identifying disease outbreaks as they occur (HI)
  - Census forecast by ZIP code/facility, applying agent-based modeling and time series principles (HI and CA)
  - ED triage scoring linked to clinical recommendations for the patient to self-treat at home (CA)
  - Mapping ventilator outcomes based on comorbidities (CA)
  - Modeling workforce planning per bed and piece of equipment (CA).

### Intermountain Healthcare

Intermountain Healthcare is a Utah-based, not-for-profit system of 24 hospitals (includes "virtual" hospital), a Medical Group with more than 2,400 physicians and advanced practice clinicians at about 160 clinics, a health plans division called SelectHealth, and other health services.

**Lonny Northrup, Senior Health Informaticist, Office of the Chief Data Officer, Intermountain Healthcare**, provided a summary of how Intermountain is leveraging analytics to inform capacity management during the COVID-19 pandemic.

- Intermountain Healthcare's Chief Analytics Officer coordinates with the Chief Executive Officer to lead the system-level COVID-19 response.
- Intermountain's efforts have focused on providing real-time situational awareness related to capacity, supplies, staffing to support decision-making for administrative and operational leaders.

- Data is published daily, and the COVID-19 internal task force meets twice per day to review status.
  - Thresholds for capacity, supplies and staffing needs are tracked to determine status in relation to standards for conventional care, contingency care (1.3X conventional care) and crisis care (6X conventional care). This modeling informs the projected surge timeline and related contingency planning for the system.
  - Intermountain’s internal infection rate estimates are informed by SEIR and SIR epidemiologic models produced by Johns Hopkins and Penn Medicine, respectively; however, these publicly available epidemiologic models do not account for the impact of social distancing measures or quarantine. Beyond mitigation tactics like social distancing, the growth rate in the model is also sensitive to other factors, including the rate of testing.
- Intermountain has postponed all “non-urgent elective procedures” to free up resources, and is anticipating the need to redeploy clinical staff to areas of need.
- Intermountain is encouraging Utahns across the state to use its Telehealth and Connect Care services to help slow the spread of the disease by seeking help remotely.
  - Intermountain also launched an online Symptom Checker to help patients assess their health symptoms for COVID-19 risk, and navigate to the most appropriate care setting.
    - » The COVID-19 Symptom Checker uses a friendly AI-powered digital assistant, named Scout, to walk people through key questions related to their current health. The result is a clinical recommendation for how they should move forward to either treat their symptoms or get additional COVID-19 support or testing.
    - » Testing capacity is an ongoing issue. Labs can process a limited number of tests per day and the supply of test kits is also a limiting factor.
  - Connect Care services are being utilized to deliver home health care, particularly for patients who are at high risk because of chronic medical conditions or have COVID-19 but can be treated safely at home.

### Additional Technology Series Call Participants:

Advent Health	Ochsner Healthcare
Advocate Aurora Health	Ohio Health
Banner Health	Providence St. Joseph Health
Baptist Health Jacksonville	Regional One Health
BayCare Health	Sharp Healthcare
Children’s Hospital of Philadelphia	Unity Point Health
Intermountain Healthcare	University of Maryland Health System
Leigh High Valley Health Network	University of Michigan Medicine
M Fairview Health	University of Pittsburgh Medical Center
Medstar Health	WellStar Health
Memorial Herman Health	Yale New Haven Health

## Comments from Additional Technology Series Call Participants

### Key topics of discussion among additional health system technology leaders included:

- Capacity modeling
  - Several health system technology leaders commented that publicly available SEIR and SIR epidemiologic models may overestimate the disease growth rate, as they do not account for the impact of social distancing measures/quarantine and the rate of testing. Thus, executives noted that the near-term impact of these models may be exaggerated, and the estimated timing of surge in the US misstated.
  - Collectively, most health systems have live dashboards specific to their institutions to track and forecast capacity, supplies and staffing needs.
- Testing capabilities
  - Health system leaders commented that testing capacity is a key issue.
  - Due to the shortage of tests, technology leaders commented that the number of confirmed cases is not the most accurate indicator of the spread of COVID-19. Several health systems are tracking number of hospitalizations to monitor disease rate, rather than number of confirmed cases.

- Elective procedures
  - Collectively, health systems cancelled or postponed all non-urgent elective procedures to free up resources during the COVID-19 pandemic.
  - One health system technology leader commented that elective procedures will be delayed until the system can validate that their region has hit “the crest of the wave” of the COVID-19 pandemic.
- Requests for data-sharing
  - The Trump Administration is engaging Leading Health Systems in unprecedented data sharing. Health system leaders commented that the volume of data requests makes it difficult to find a single source of truth.
    - » On Sunday, March 29th, the Centers for Medicare & Medicaid Services (CMS) sent a letter to the nation’s hospitals on behalf of Vice President Pence requesting they report data in connection with their efforts to fight the 2019 Novel Coronavirus (COVID-19).
    - » The Trump Administration is requesting that hospitals report COVID-19 testing data to the HHS, in addition to daily reporting regarding bed capacity and supplies to the CDC National Healthcare Safety Network (NHSN) COVID-19 Patient Impact and Hospital Capacity Module.

**Additional resources are available in The Academy’s COVID-19 Resource Center. Materials specific to topics covered in this Town Hall include:**

- [Command Center & Communications Resources, including Data and Dashboards](#)
- [Workforce Strategy & Operations Resources, including Redeployment and Pay Guidelines](#)
- [Contingency Planning Resources, including Strategies for Conservation of Supplies](#)