Which Nursing Homes Are at Risk of COVID-19?
How a Predictive Model Can Help Target Interventions

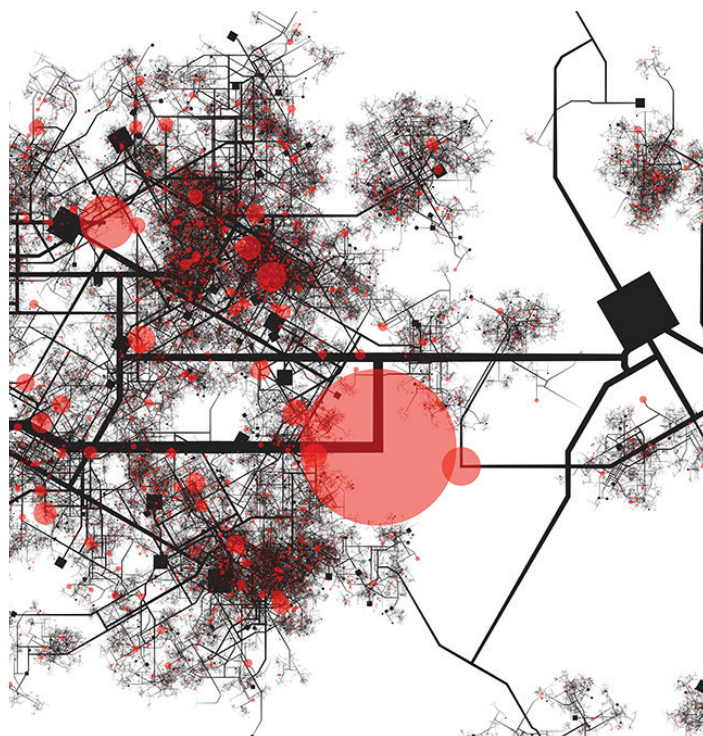## Identifying Nursing Homes Most at Risk for an Outbreak

In nursing homes, the impact of COVID-19 has been particularly significant due to the age of the residents and the high proportion of those with pre-existing conditions that are likely to exacerbate the most severe symptoms of COVID-19. Nursing home residents and staff account for more than half of the fatalities in states that report nursing home-related deaths. Facilities have been trying to reduce the likelihood of the virus being introduced, and federal, state, and local agencies have provided guidance to curtail community spread into nursing homes and have intervened to provide support when an outbreak occurs. However, given how contagious the virus has proven to be, and the fact that asymptomatic staff and visitors can transmit it, preventing the introduction of the virus into homes is difficult in communities where there is active community spread. Likewise, after the virus has been introduced into the facility, the ability to effectively limit its spread and impact is complicated due to its highly contagious nature and the age and underlying health of the residents. Given these challenges—and the potentially deadly outcomes—there is a need for federal and state regulators, as well as public health agencies, to ensure that nursing homes have the resources and training needed to prevent the introduction of the virus into their facilities and, if necessary, are prepared to effectively intervene to avoid the spread of the virus within the facility.

In March 2020, the Centers for Medicare & Medicaid Services (CMS) announced a new, targeted inspection plan designed to help keep nursing home residents safe

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in the face of the COVID-19 pandemic. However, with over 15,000 nursing facilities in the United States, it is not feasible, nor necessary, to provide the same level of extensive oversight and support at every facility. Instead, available public health resources should be applied at the facilities with the highest risk of an outbreak of COVID-19. Abt has been monitoring the impacts of COVID-19 on nursing home staffing levels, resident case-mix, and data quality and completeness for CMS. As an extension of that work, we have built a predictive model to identify— with 91-percent accuracy—nursing homes that are most likely to experience an outbreak based on the facility and community characteristics. The goal is to provide information that can be used by federal and state agencies, as well as other stakeholders, to identify the most at-risk nursing homes and schedule them for inspection surveys. This information may potentially provide state and local public health officials with the information they need to implement interventions, such as staffing or equipment augmentation.

Here's how Abt can apply what we've learned and our expertise to help your clients:

Step 1:

DEVELOPING A MODEL TO PREDICT NURSING HOMES MOST AT RISK

The risk of a COVID-19 outbreak at a nursing facility is a function of several key factors, some of which are reflected in nursing home and epidemiological indicators. We're using some of the best data and epidemiological models available to develop a predictive model that assigns a risk rating to each nursing facility that has not yet experienced an outbreak. This forecast is not static; we routinely update the risk ratings as new information becomes available. These updates allow stakeholders to monitor the system's performance, and refine the model's prediction accuracy as more data become available.

Step 2:

DEVELOPING AND HOSTING A WEB PORTAL TO SHARE FINDINGS

A user-friendly web portal is one way we've found that sharing the model's deep data helps a wider audience of public health professionals. Abt's Analytic Computing Environment, or ACE, is equipped with a full complement of state-of-the-art quantitative, qualitative, geospatial, survey, and visualization tools to meet diverse analytic needs. These applications are deployed through remote desktops, remote application servers, dedicated web servers, and containers. Users with appropriate permissions can access the data they need from any online entry point. ACE complies with HIPAA, FERPA, and FISMA Moderate standards.

CONTACT US

To discuss how we can deploy these tools to help you combat COVID-19 contact:

Christopher Spera, Ph.D.
Division Vice President
Health & Environment Division
Chris_Spera@Abtassoc.com - 301.347.5950