

Experts developing models to help local providers prepare for COVID-19 surge

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As policymakers, health care providers and the general public struggle to make sense of the COVID-19 pandemic, the somewhat obscure field of health informatics has become a little less so. In just a few weeks, graphs

showing the numbers of infections and the rate of hospitalization have become a normal part of the evening newscast.

Health informatics uses information technology to gather and analyze patient data from health records for the purpose of improving patient outcomes. And now, just as phrases like "flatten the curve" have become part of everyday conversations, experts in [health informatics](#) are in demand.

Last month, the Erie County Department of Health and local hospital systems reached out to the University at Buffalo's Institute for Healthcare Informatics (IHI) in an effort to better understand how the pandemic could unfold in Western New York.

Now, working collaboratively with the hospital systems, [insurance companies](#), electronic health record vendors and local officials, the UB researchers are developing models that are providing important context for the situation in Western New York.

"The goal of our models is not to characterize overall transmission of COVID-19 in Western New York or when it will peak," said Matthew Bonner, Ph.D., associate professor of epidemiology and environmental health in the UB School of Public Health and Health Professions. "The goal of our models is to help the local health care system get prepared for the challenging onslaught of COVID-19 cases."

The value of the models, according to Peter Winkelstein, MD, executive director of UB's IHI and chief medical informatics officer for UBMD, is to guide the hospital systems' operational planning.

And while he noted that the inputs for COVID-19 models are changing, he said that so far, the models for Western New York point to a positive trend: that [social distancing](#) is working.

"The message we are getting from our models is that social distancing in Western New York is working, and that's really good," Winkelstein said. "We know this because the rate of the rise in the number of cases in the hospitals is going relatively slowly—it's slower than even two weeks ago. The total number of cases is increasing, but it's not increasing as fast as it was. And when the increase is slower, we have more [time](#) to prepare."

Time to prepare is a key variable in how COVID-19 affects a community, Winkelstein said.

"Buying time can be enormously valuable," he said. "When you have more time, the situation is less likely to overwhelm the [hospital](#) systems. When there's more time to prepare, you can get more masks and supplies, and equipment like ventilators.

"Time is our enemy and our friend," he added. "It's coming, but social distancing is buying us time."

Winkelstein noted that when social distancing works, it will push the peak farther out.

"Social distancing will absolutely lower the height of the peak number of cases and lower the number of fatalities in hospitals. All of that is really good, but it does mean the peak will come later in time."

While that is absolutely beneficial to the community, he said that that's not something many people want to hear.

"That's because it's probably not going to be over very soon," he said.

At the same time, exactly when the cases will peak in Western New York is still very uncertain and it depends on parameters, which are uncertain for every community dealing with the novel [coronavirus](#).

"Our models help the health care community understand what's going on," said Bonner. "None of the models are perfect. It's appropriate to give the best information we have, but it's a little like forecasting the weather. We are more optimistic about what we expect to see in the short term, like a week, maybe two, than we are in the long term, say a month or more."

Provided by University at Buffalo

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