THE UNIVERSITY OF CHICAGO

We observe three concerning trends in recent data:

1. In all regions, deaths and hospitalizations have leveled off or are slightly increasing. This implies $R_t$ is near or potentially exceeding one.
2. When testing capacity expands, we would expect the newly tested people to have, on average, lower percent positivity than the currently tested population (which includes most or all severe infections). The rise in test positivity with expanded testing suggests Rt exceeds one.
3. We see continued evidence that testing is particularly low in Black and Hispanic residents and in the northeastern and southern regions.

*These signs point to an epidemic that is growing.* More organized surveillance, including of outpatient cases (sentinel surveillance), could provide much clearer and faster insight into epidemic activity.

These increases in $R_t$ to near one probably date to Phase 3 and show immediate action is needed to reduce spread. Requiring masks in public settings and limiting large gatherings, including in bars and restaurants, are probably the most effective immediate interventions to reduce $R_t$.

July 18, 2020

Northwestern University

- Recent trends in cases and hospital census are **concerning** and not to be talked down or ignored
- Flattening of hospital and ICU census in all Covid Regions in the NE is not a good sign, suggests that community transmission has **increased to $R_t$~1 even before Phase 4**
- We desperately need better metrics to tell us where we are: **upstream and unbiased indicators**. Sentinel surveillance is starting but needs resources to be rolled out more quickly and completely
- Testing still needs to be more available, especially in Northeast and Southern regions, and to Black and Hispanic communities. These regions and demographics are under-tested relative to other IL populations

Argonne NATIONAL LABORATORY

- All simulated scenarios involving even modest relaxation in individual protective behaviors (capturing activities such as wearing masks, social distancing, and washing hands) resulted in flattening or increasing overall transmission rates:
    - Increased messaging on the importance of protective behaviors, particularly as restrictions are eased, is urgently needed to help control potential resurgence of infections.
- Based on our analyses we did not find that COVID-related hospital admission trends offered a clear early warning signal for forecasting epidemic trajectories that have a high likelihood of exceeding current hospital capacities in Chicago:
    - This provides additional support for the need for better sentinel surveillance systems that can provide more upstream signals for initiating resource and time intensive mitigations.

ILLINOIS

- The current uptick in hospitalizations and ICU occupancy in Illinois is explained by relaxation of social distancing late in Phase 3. It is still too early to quantify the consequences of the transition to Phase 4. However, given how close we were to Rt=1 in Phase 3, **almost any amount of increase in transmission in Phase 4** would result in a **second wave**
- The second wave is l**ikely to be more severe in downstate regions** than in Chicago and Suburbs since there is very little immunity in these regions (just like in TX and AZ). Regional overflow plans need to be developed.
- We developed and quantified **Hospitals-at-Risk measure** - the likelihood that COVID-19 patients would overflow hospital capacity on a given date - using a **model calibrated to hospitalization data**. These probabilities need to be closely monitored in all regions (not just the NE region)