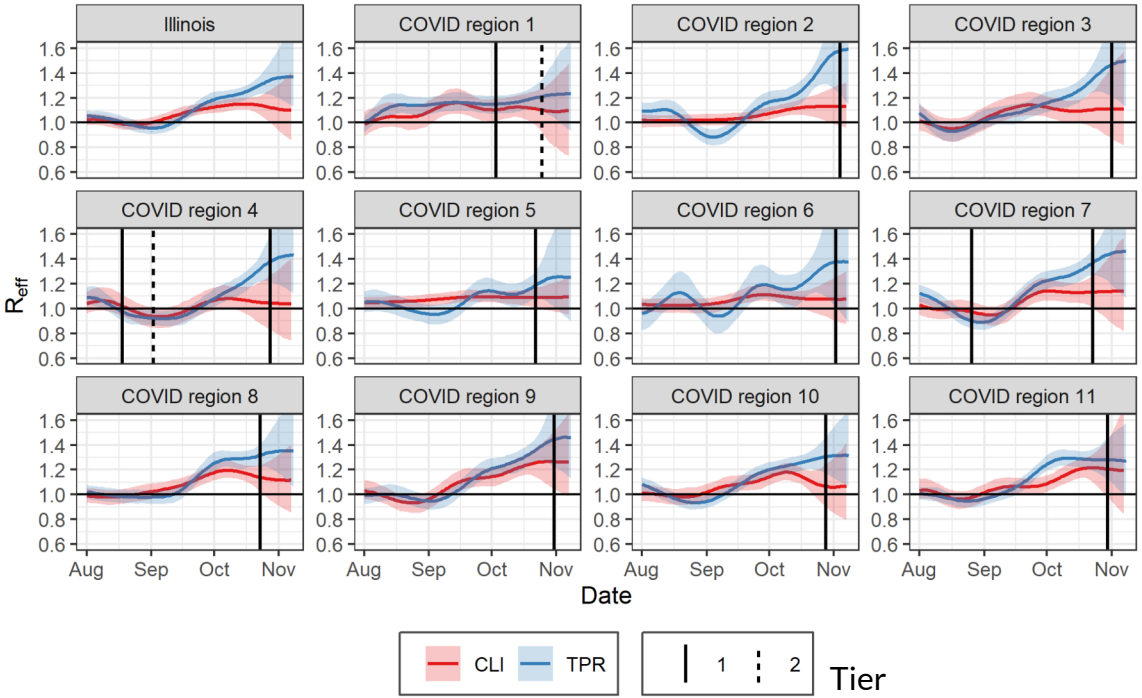
THE UNIVERSITY OF CHICAGO

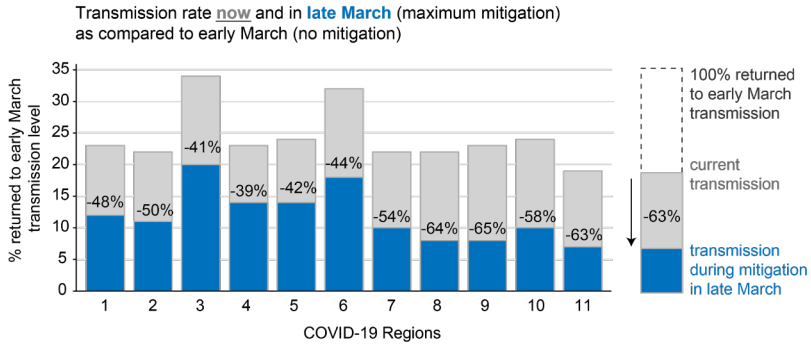
- In most regions, R_{eff} remains clearly above 1 and the epidemic continues to grow exponentially.
- Measures of R_{eff} from TPR-adjusted case data (blue) are more pessimistic and less reliable than measures from admissions with COVID-like illness (CLI, red).
- **The rate of contact between people must drop by 10-20% and possibly more for the epidemic to decline. Recent mitigations are not clearly lowering R_{eff}.**

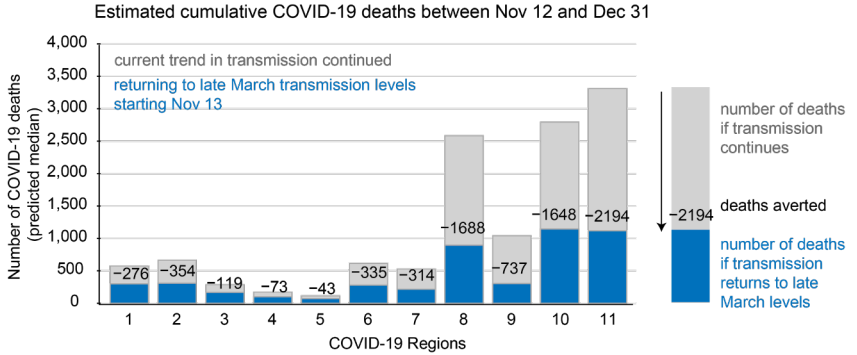


Nov 13, 2020

Northwestern University

- We estimate that **R_t > 1 in all Covid Regions and is still growing**. There is no sign yet of any decrease.
- If current trends continue, we predict ~**12,600 more COVID-19 deaths** in Illinois between now and the end of 2020.
- We estimate that transmission rate has returned to 17-36% of the pre-lockdown transmission rate in March. This means:
  - current actions (masks, distancing, etc) are making a difference but they are not enough
  - things could still get a lot worse.
- We simulated a mitigation scenario that, starting from Nov 13, reduces transmission to the lowest levels ever observed (as in late March during stay-at-home) in each region.
- **A strict and prompt mitigation could save around 7,800 lives** (95%CI 1,412 -19,441) **through the end of the year.**





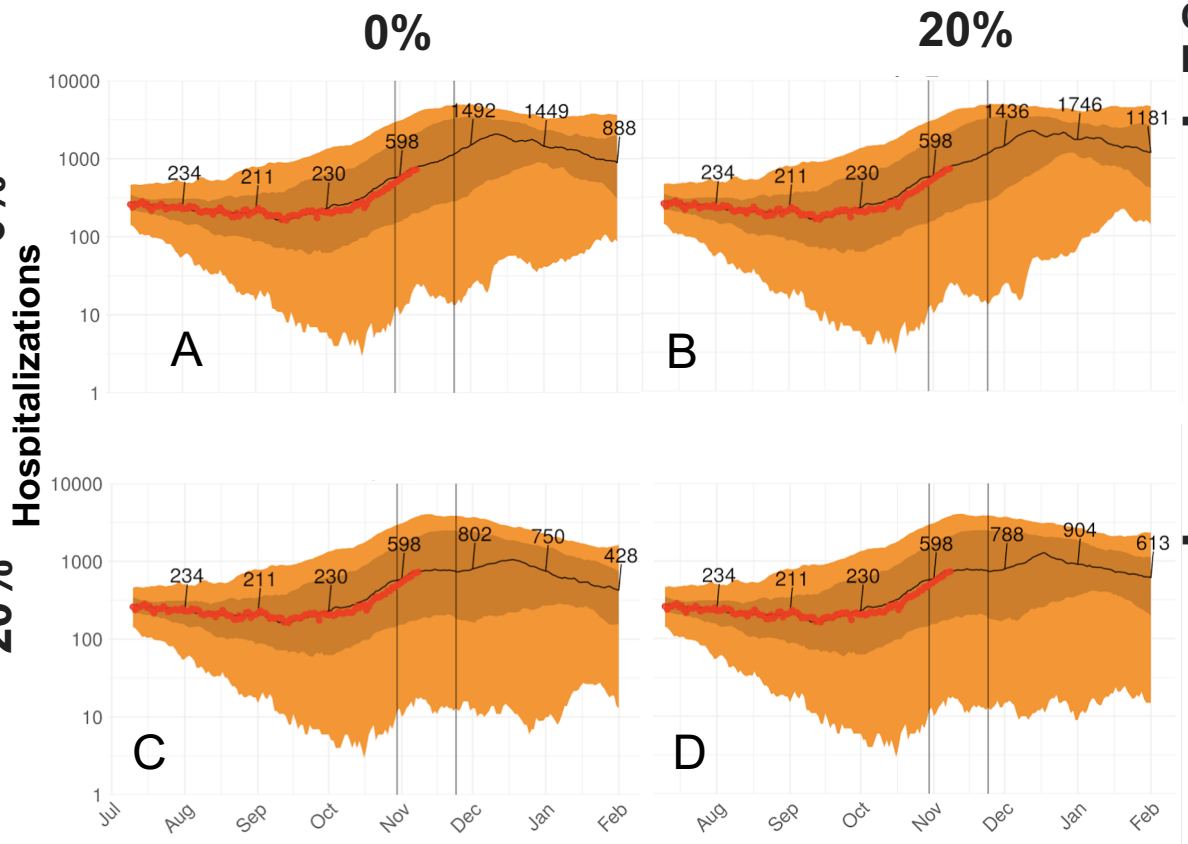
(The model assumes constant case fatality rates and quality of care regardless of strain on hospital capacities)

Nov 13, 2020

Nov. 24: Relaxation in Protective Behaviors

Oct. 30:
Out of Household (OOH) Activity Levels Decreasing
Improvement in Protective Behaviors

0% 0%
10% 20%



Vertical lines are **10/30** and **11/24**

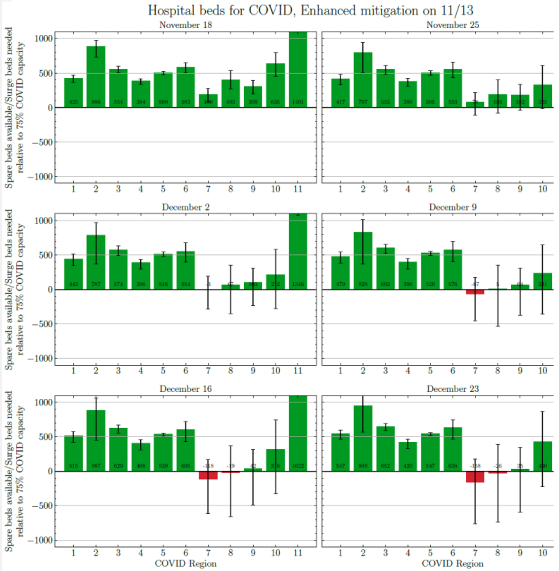
Current Trends and Holiday Gatherings

- The effects of the October 30 mitigations in Chicago would have to result in a combined 10% reduction in out-of-household activity levels and 20% improvement in protective behaviors to flatten the hospitalization trend (C).
- Relaxed behaviors (B, D) over gatherings during the Thanksgiving holidays show slightly worse outcomes in already concerning trends.

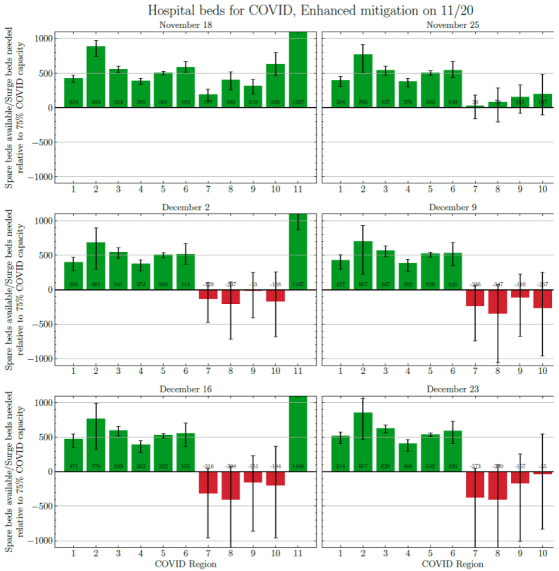
ILLINOIS

15% drop in transmission can potentially reduce hospital overflow if enacted within 1 week

1. If R_t remains the same as it was on 11/10 our baseline model predicts hospital overflow (at 75% COVID capacity) as early as December 2
2. If enhanced mitigations reduce R_t by 15% by 11/13, the largest potential hospital overflow will be smaller than baseline by a factor of 4-5
3. If this reduction is delayed by even one more week to 11/20 – the overflow will be bigger, especially in Chicago suburbs (regions 7-10)
4. Region 11 (Chicago) is not shown due to modeling uncertainties
5. These estimates at best show trends correctly but not precise numbers. They also do not take into account moving cases between suburbs and Chicago hospitals, or other patient redistribution.



Scenario 1: Rt drops by 15% starting 11/13



Scenario 2: Rt drops by 15% starting 11/20

Estimated median hospital shortfalls for all regions over the next 6 weeks, under two hypothetical scenarios.

Nov 13, 2020