

It has been a **LONG** two weeks since we began tracking US COVID-19 cases and testing state by state in detail on a daily basis. Thanks for being with us. It seems the news gets worse every day and we are now hearing projections of the worst case scenarios as the Federal Government and States (*rightly*) plan for hospital capacity surges in the coming two weeks. We work to bring fact to this every day, **balance the hype with data** to understand how this is evolving. With all the hype around us, the data give us some good news on the trajectory of the outbreak. Lets get straight to that:

Daily New Case Growth is Declining

The total daily growth in new active declined yesterday to 13%, the lowest level in 11 days (*see chart below and spreadsheet*). The rate of growth in new cases was also the lowest in two weeks at 7%. This means the daily growth in new cases and the rate of growth in new cases are both hitting 11 day lows. This has been a steady decline for the US in Total. For the top ten states with the highest concentration of cases the decline has been steady for 7 days. The net of this → all the measures, controls and quarantine efforts are taking effect now.

Early Cases are Recovering – Reducing Total Case Counts

In addition to the steady decline in new case growth, the early cases are now resolving/recovering and an increasing # of the US case total will be removed from the daily active case total. For 85% of cases the recovery period is two weeks. Two weeks ago we were adding 5,000 to 10,000 new cases each day. Over the next 5 days a total of 40,000 cases will be removed from the US/State case totals and that number will grow to 90,000 cases over the next 5 Days. Recoveries of the non hospitalized cases are not well tracked, this represents 85% of total case counts.

Note: The media only report Total Cases, not Active Cases, there is a 15% difference today, or 15,000 recovered/resolved cases. The difference will only grow as a large volume of old cases recover/resolve in coming days. (see spreadsheet Total and ActiveCase tracking on the first tab)

The net of this is the following; if new case growth remains at ~15% per day we will double the total case count in the next 6 days to 400,000 cases in the US, we will also resolve/recover 100,000 cases over that period suggesting an active case growth of 50%. If all current measures continue to have effect, we will see daily new case growth continue to decline and we will also see a surge in recovered cases and dropping case totals, or the **Curve will Flatten**. This does not impact/reduce the hospitalization and mortality issues which will increase/surge over this period, but case totals will begin to decline at current measured spread levels.

Headlines:

- Many States continue Hospital “Surge Planning” to handle increasing volumes of critical patients (~15% of total cases). These issues and the associated mortality will likely dominate activity and media attention in coming days. Models used for this planning show the Hospitalization peaks over the next two weeks. These are current worse case projections for capacity planning . (<https://covid19.healthdata.org>)

- Ventilation seems to have little impact on critical patients and is only a prolonging procedure for 50% to 80% of cases put on ventilators. This will raise difficult *choice* issues in the coming two weeks.
- Total US testing rose slightly yesterday to ~110,000 tests. Still no sign yet of new capacity or capability in daily test volumes.
- **New US Cases Growth – Total US new case growth fell to 14% yesterday continuing a 10 day decline in new case growth.**
 - **New York:** The growth in new active cases growth declined to 9% yesterday following steady decline from the peak of 52% on March 22nd.
 - **Top 12 States:** Total new cases grew at 17% yesterday, or ~14,000 cases. The rate of new case growth declined to 15% yesterday.
 - **All Other State Totals:** Total new cases grew at 15% yesterday, or 4,786. The rate of new case growth was 10% yesterday
 - **Washington State:** Appears to have hit a baseline in new case growth at ~5%. New cases grew by 362 yesterday, or 7% from prior day at 4%.
- **Hospitalization:** Rates held steady at roughly ~14%, with a total of 31,440 Hospitalized cases yesterday.
- **Mortality: increased yesterday to 2.4% yesterday, up from 2.1 % the day prior.** (*Note: this is not a “true” mortality rate, but total daily mortality/Total Positive Cases – expect this to rise materially in coming days*)
- **Positive Tests rates dropped to 23% from 24% the day prior.**

Testing:

- Testing yesterday of ~110,000 total tests. This has been flat at this level for 7 days. We have conducted ~1,230,519 tests across the US to date.
- The rate of positive outcomes declined to 23% yesterday. Several states had high % positive rates: *New York, New Jersey, Mississippi, Indiana*

New/Active Cases

- **Total new active case growth was 13%, Top 12 States active cases grew 17% and has been relatively flat at these levels for 4 day, declining from a peak of 36% on March 22nd.**
- Total new cases grew 15% yesterday, or 26,473, up from 24,832 the day prior.

Hospitalization

- The Hospitalization remained steady yesterday at ~14% after rising steadily the last three days and up from 7.7% on last Monday.
- **New York Hospitalization grew to 18,368 cases, up from 15,904 cases the prior day – New York total bed capacity is ~53,000, and ICU bed capacity is ~3,000**
- Total positive cases in hospital beds across the US yesterday was 31,440 up from 26,990 the prior day.
- **Total US Hospital beds are ~925,000, Total US ICU Beds is ~100,000**

Recovery/Mortality

- The Mortality rose 0.3% to 2.4% nationally. Deaths totaled 5,102 across the US to date, with a total of 1,049 yesterday (*1st day over 1,000 to date*). Expect this to continue to grow as hospitalization grows
- **Note:** *True Mortality Rates are difficult to measure during an outbreak, only after can it be accurately calculated. We use Total Daily Mortality divided by Total Positive Cases as a consistent measure. To be more accurate, today's mortality is related to new cases 10 to 15 days ago, this means true mortality rates are much higher than we show in this daily metric, likely they are double, or ~5%*