

## Pseudo Recovery Calculation 5/17

We have been following the number of cases and the number of deaths, but I have been asked many times what about the recoveries. I get no data on recoveries. I asked many times for it but was told the data is not available.

I do have another piece of information, however. The town keeps track of people who have tested positive to protect our first responders. A system is designed to alert dispatchers if there is a 911 call to a COVID affected address. They then pass it on to first responders. Thirty days after the person tests positive they are removed from the system. I DO NOT BY LAW HAVE ACCESS TO THE DATA.

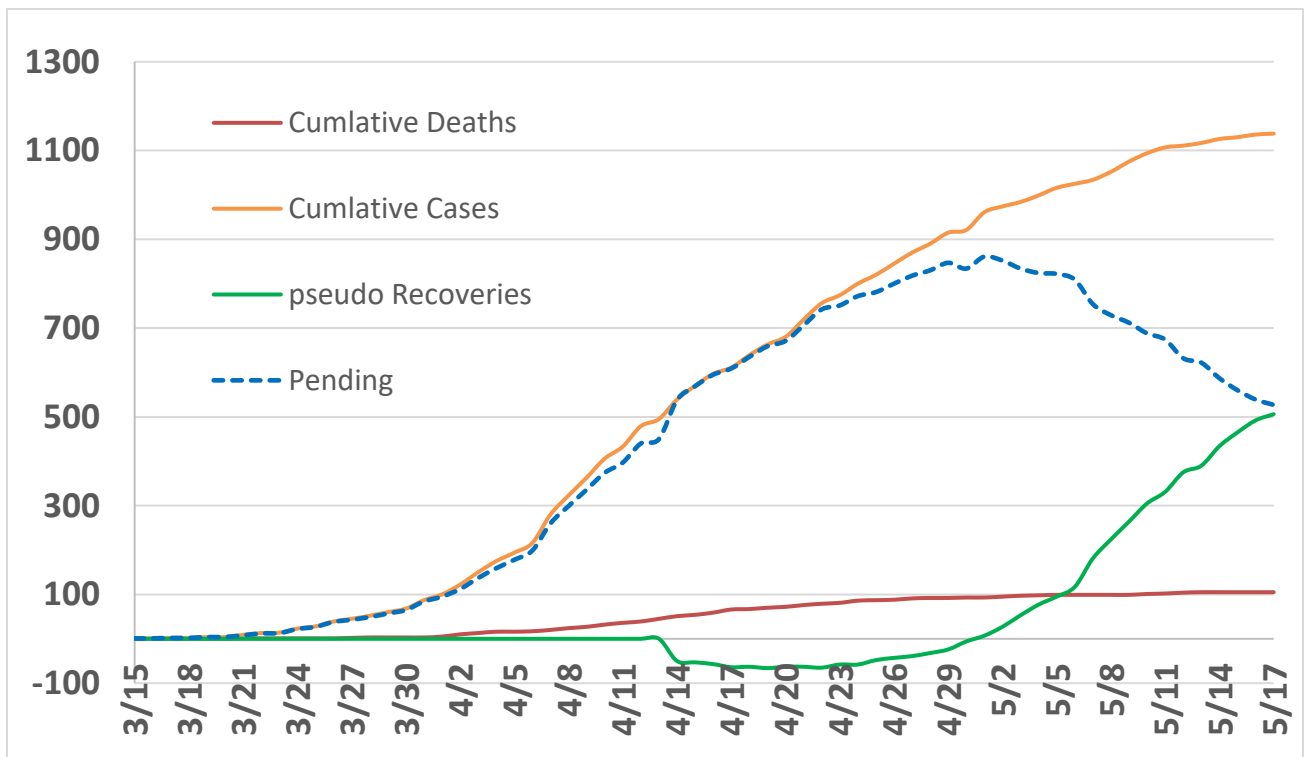
The thirty days is somewhat arbitrary, but I will use it in this way. If a person tests positive and has not died after 30 days, for the purpose of this calculation, I will consider them recovered. So, the first caveat is the 30 day assumption may not be true.

The second caveat is I can't match positive cases with deaths. When I receive the number of positive cases I get the age for each person. I also get the age of each death. But I can't match them one for one.

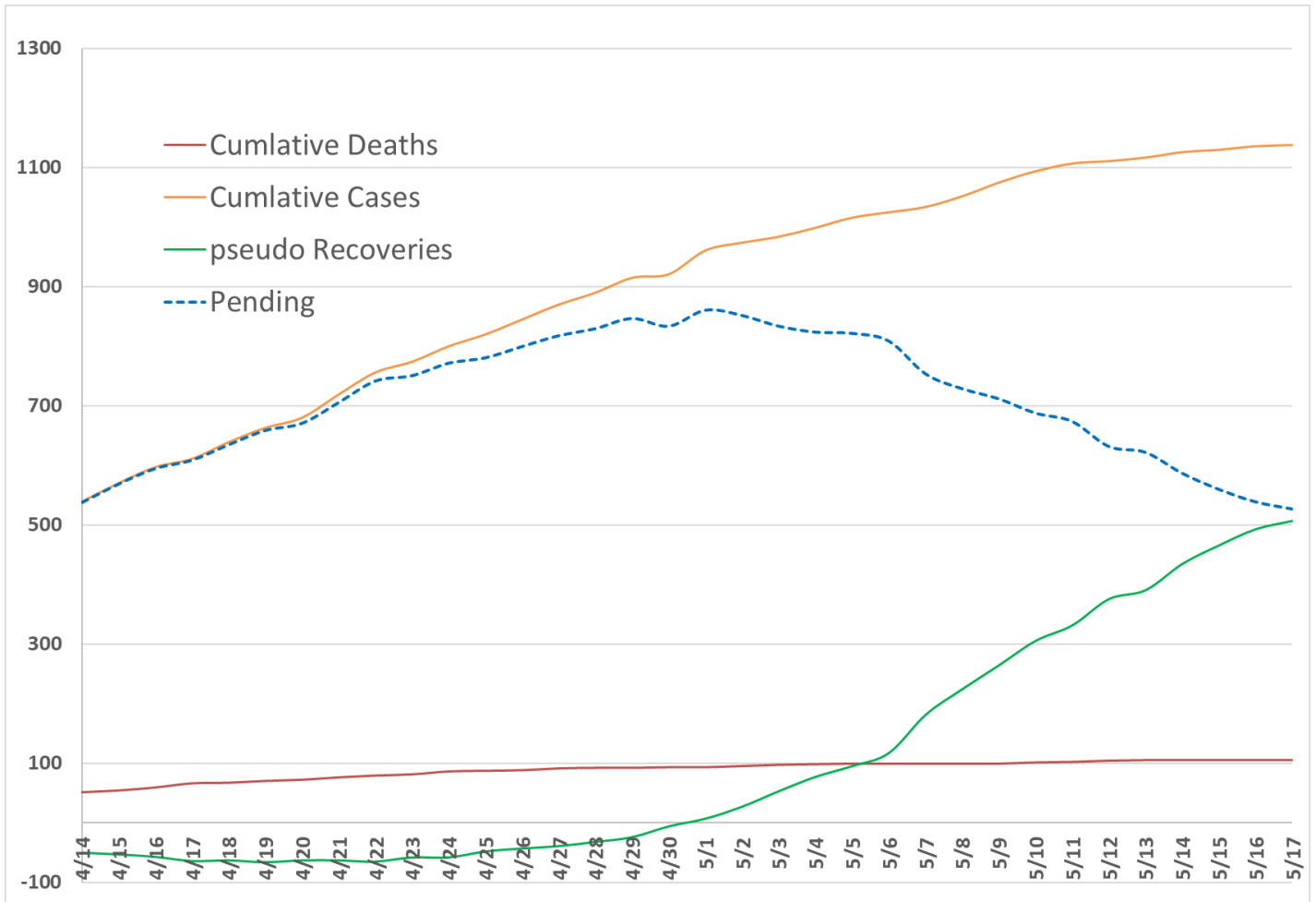
Keeping those caveats in mind we can make some calculations. For every day (D) I will take the number of cases from 30 days before ( $D_{30}$ ) and subtract from it the number of total deaths on day D. I call that the number who have recovered. There is another problem, since I can't match positive cases to deaths and since deaths lag positive tests (usually) I can't use the number of total deaths on  $D_{30}$ . So, I use the number of deaths on day D. You will see the problem with this in a minute. If someone has a better way to do it let me know. I'm open to changing the calculation.

The problem with this method is a death comes into the calculation immediately but the  $D_{30}$  cases takes 30 days. In short, I'm mixing  $D_{30}$  with D. It's not quite like mixing apples with oranges, it's more like mixing Macintosh with Golden Delicious. To remind us of all the caveats I call recoveries, pseudo recoveries.

Here is the graph from March 15<sup>th</sup>, the day of our first positive case. You'll note the problem on April 14<sup>th</sup>, pseudo recoveries go negative. That's because the deaths enter the calculation immediately and recoveries take 30 days to enter. It balances out on May 1<sup>st</sup>.



To make it easier to read I graphed it again starting at April 14<sup>th</sup>, 30 days after the first case.



You'll notice the number of pseudo recoveries is about 500 with about 500 cases still under 30 days so their recovery is pending. BTW Cumulative cases = Pending + pseudo Recoveries + Cumulative Deaths.

Again, if you have suggestions on how to calculate it a better way. Please comment.