

Governor Cuomo's COVID Updates, an NLP Analysis

November 13, 2020
Gavin Jones

Transcripts:

- Gov. Cuomo provided daily updates from March 10th through October 26th



Andrew Cuomo New York Coronavirus Press Conference Transcript: March 16

• 8 months ago

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- Gov. Cuomo provided daily updates from March 10th through October 26th
- Stopped providing daily updates in June, began operating on a 2-3 update per-week basis
- Main mode of communication for the Governor's office to residents of New York State, chronicled policymaking as one of the first US states dealing with the pandemic





Analysis performed

- SpaCy:
 - Lemmatized
 - Part of Speech - Nouns and Adjectives
- Stop Words:
 - Standard english stop words, in addition to common words such as 'New York City' and 'COVID'
- Conducted LDA, seperating into eight topics



Topics:

- **Stats Driven Predictions & Planning:**
question, school, **test, rate, testing, infection, case, positive, plan, hospitalization, antibody**, datum, fact, high, news
- **Politicized COVID Issues:**
ventilator, federal, government, hospital, projection, model, bed, **president, stockpile, supply, vaccine, governor, mask**, month, equipment
- **Political Banter:**
line, guy, smart, doctor, tough, question, **open, government, life, family**, mask, **store, job, economy**, old
- **Reopening:**
sorry, budget, **mask**, money, operator, federal, unemployment, **quarantine**, question, year, mayor, **gym, indoor**, governor, **beach**



Topics *Cont'd*:

- **Essential Services:**

governor, hospital, worker, essential, business, train, public, work, subway, service, phase, region, death, healthcare, homeless

- **State Mandates:**

home, nursing, facility, patient, second, resident, rule, answer, care, staff, park, governor, wave, regulation, sense

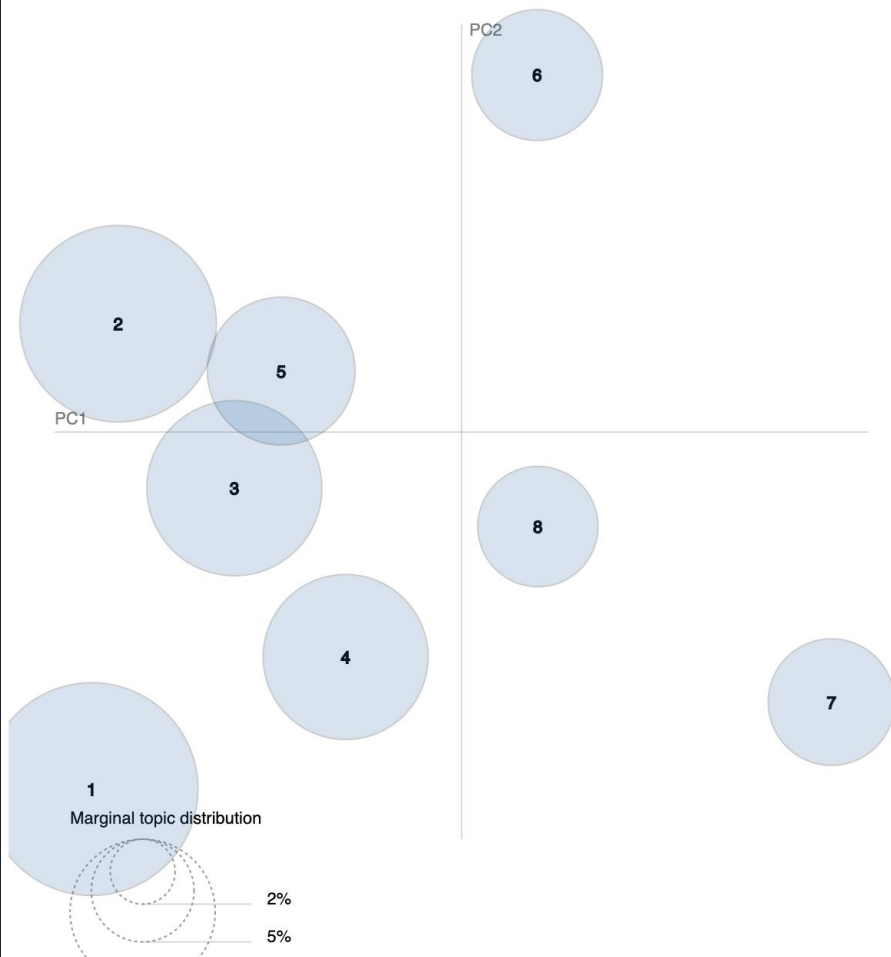
- **Enforcement & Opposition:**

police, law, local, government, fact, point, enforcement, change, situation, community, issue, compliance, moment, department, decision

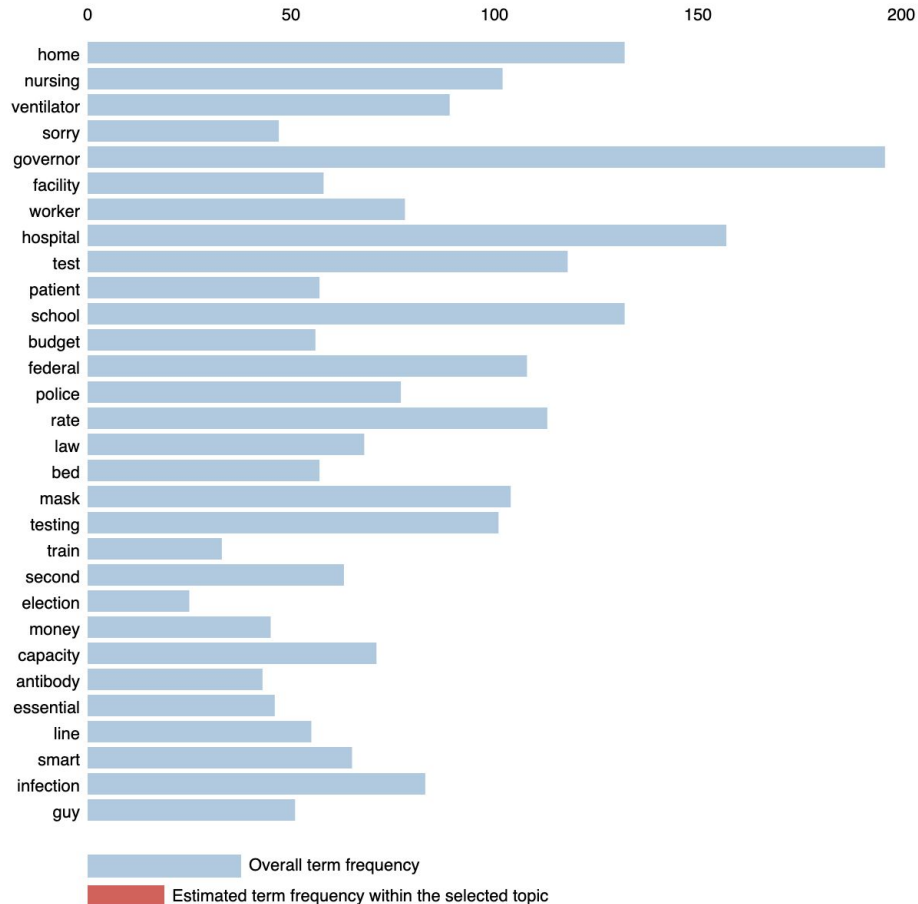
- **Election Related COVID Commentary:**

election, capacity, bed, contact, test, tomorrow, timeline, testing, icu, question, ballot, lot, board, region, temporary

Intertopic Distance Map (via multidimensional scaling)



Top-30 Most Salient Terms¹



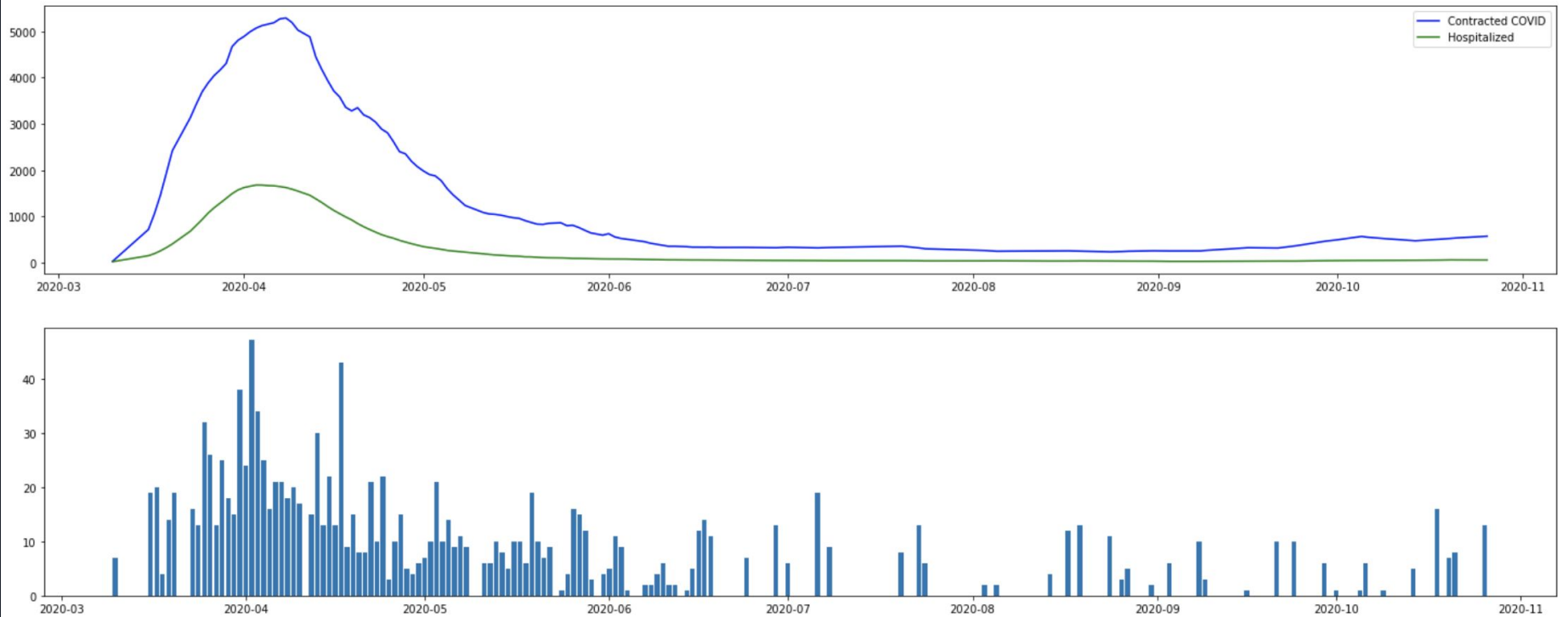
1. saliency(term w) = frequency(w) * [sum_t p(t | w) * log(p(t | w)/p(t))]] for topics t; see Chuang et. al (2012)

2. relevance(term w | topic t) = $\lambda * p(w | t) + (1 - \lambda) * p(w | t)/p(w)$; see Sievert & Shirlev (2014)

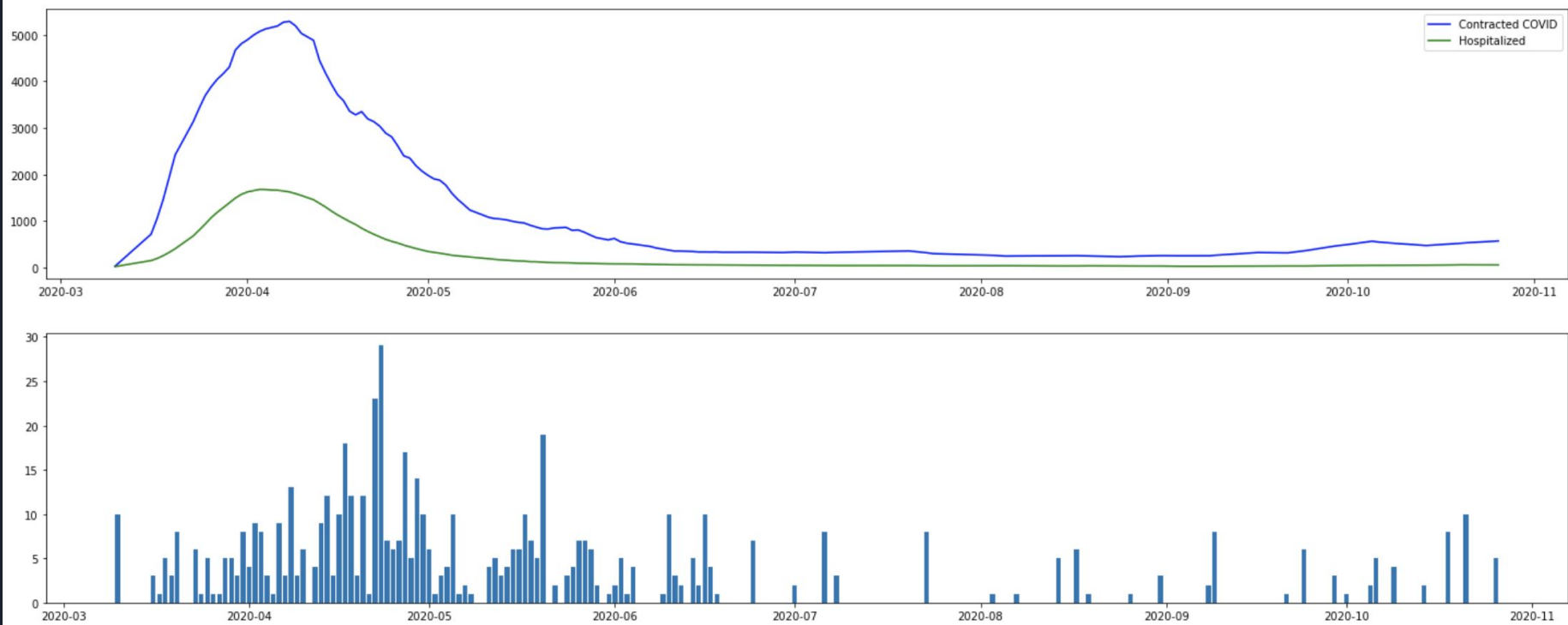
Results



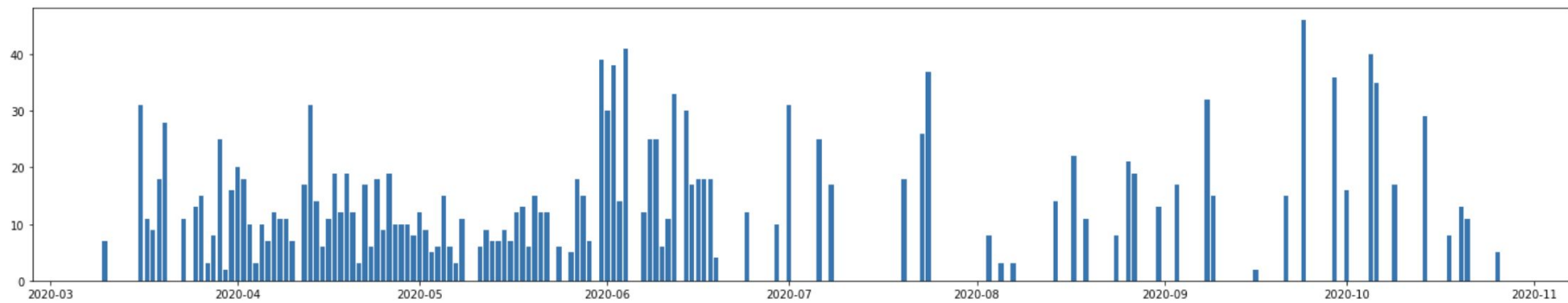
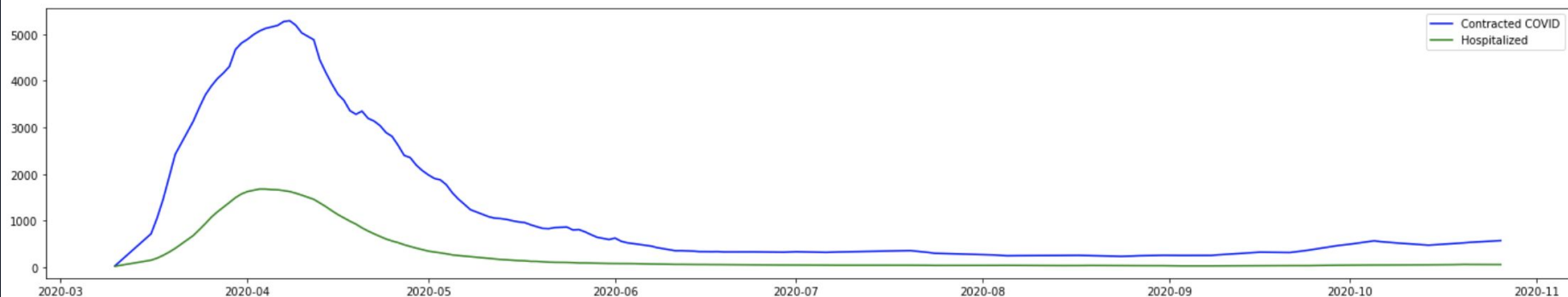
Hospitalization Stats Vs. Politicized COVID Issues



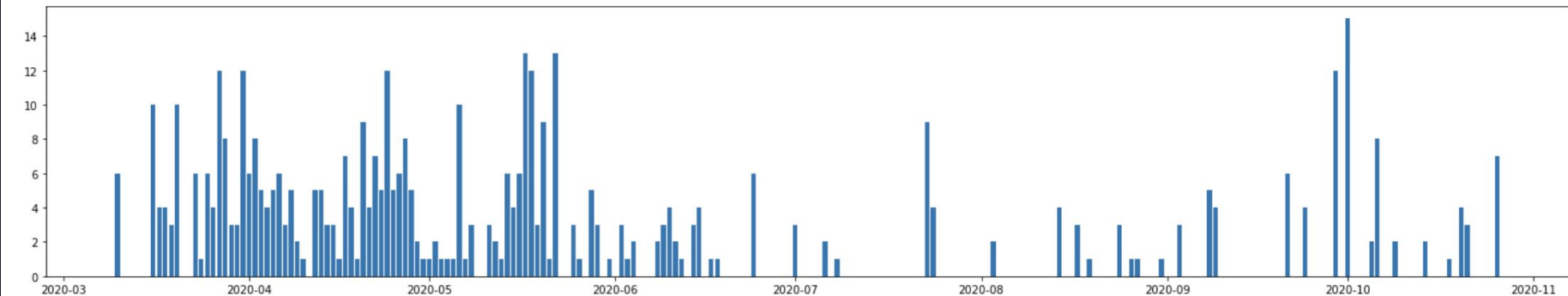
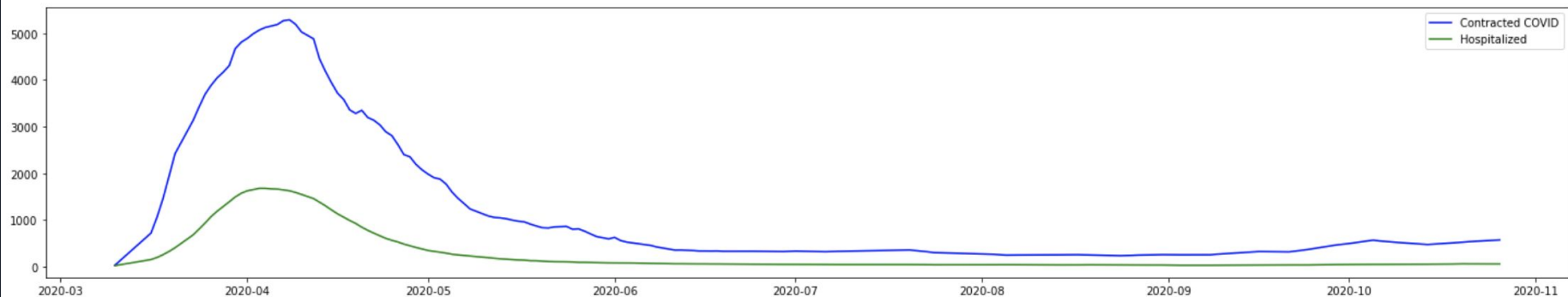
Hospitalization Stats Vs. State Mandates



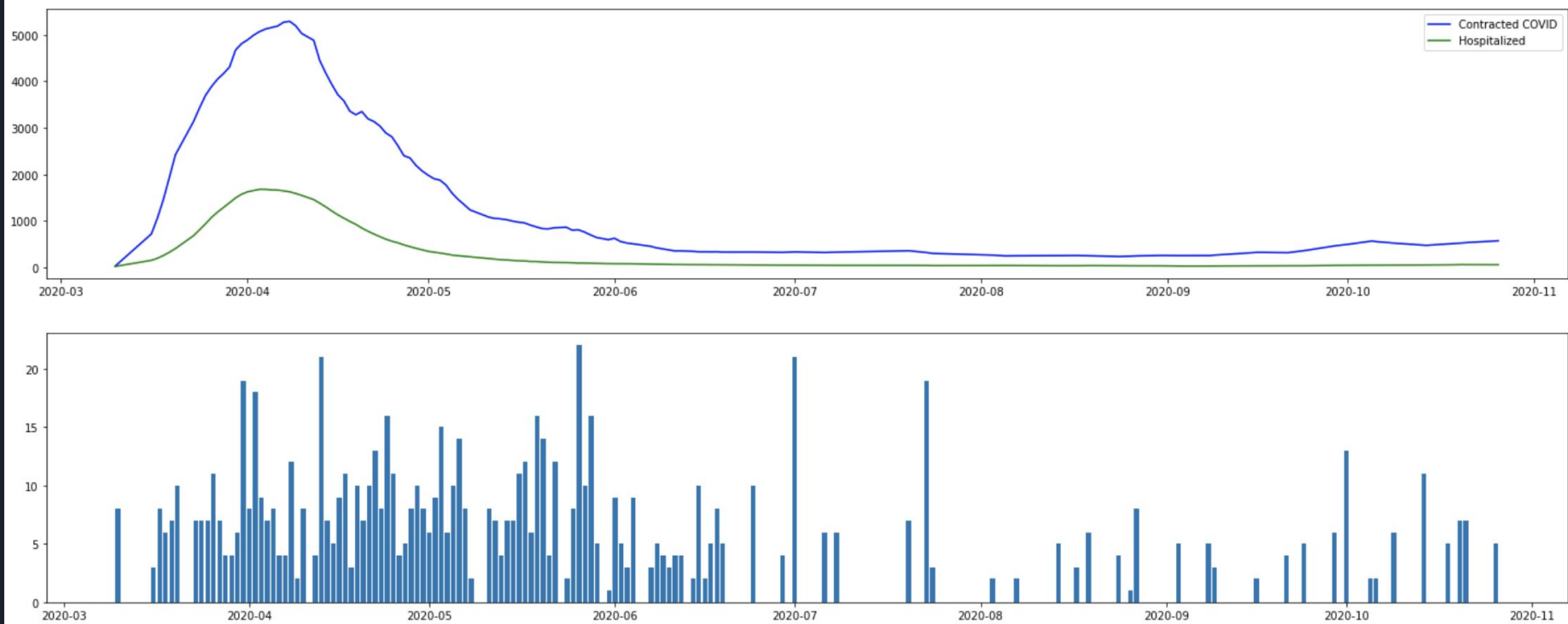
Hospitalization Stats Vs. Enforcement & Opposition



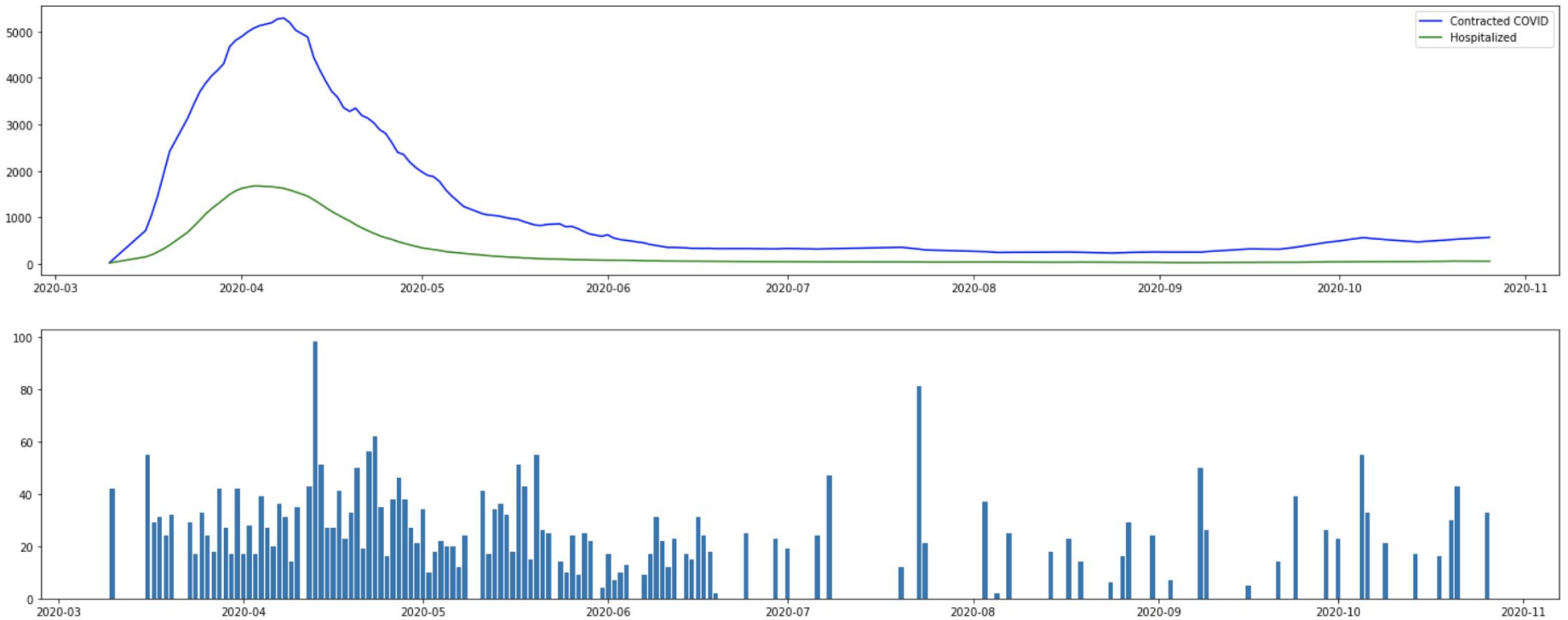
Hospitalization Stats Vs. Election Related COVID Commentary



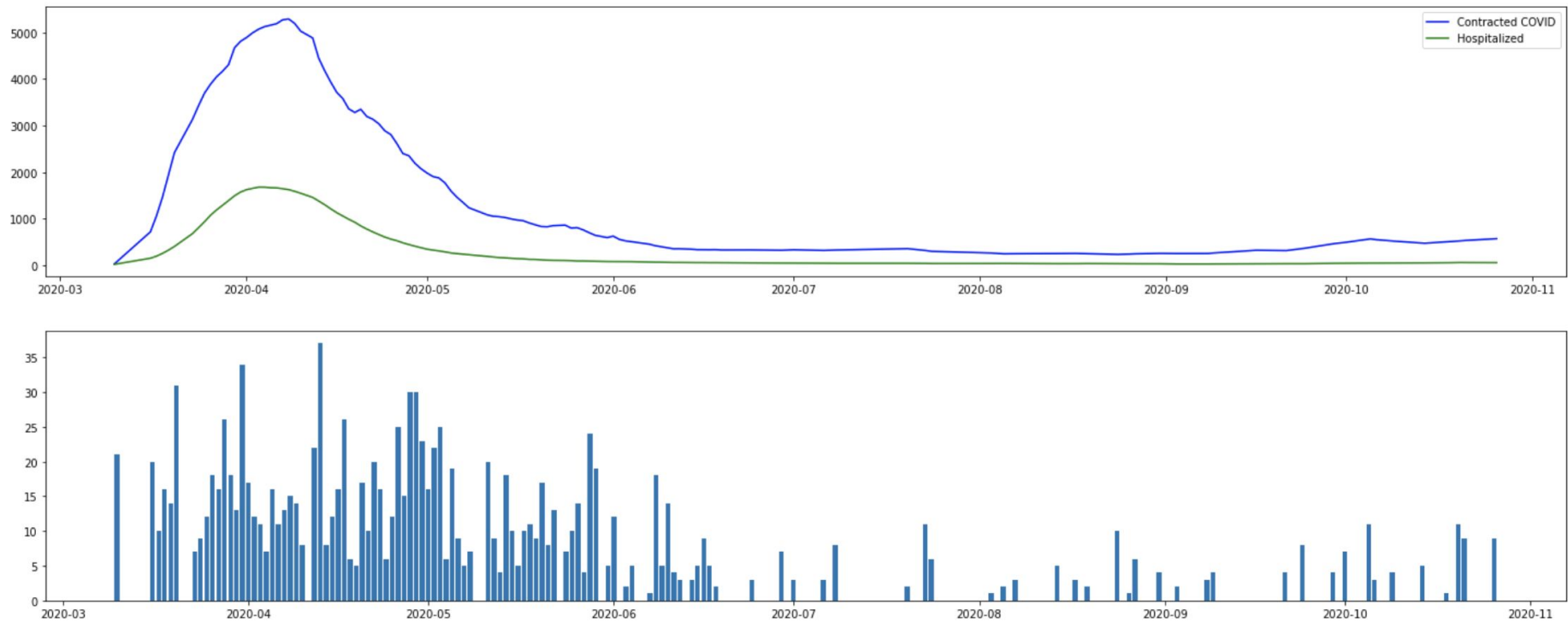
Hospitalization Stats Vs. Political Banter



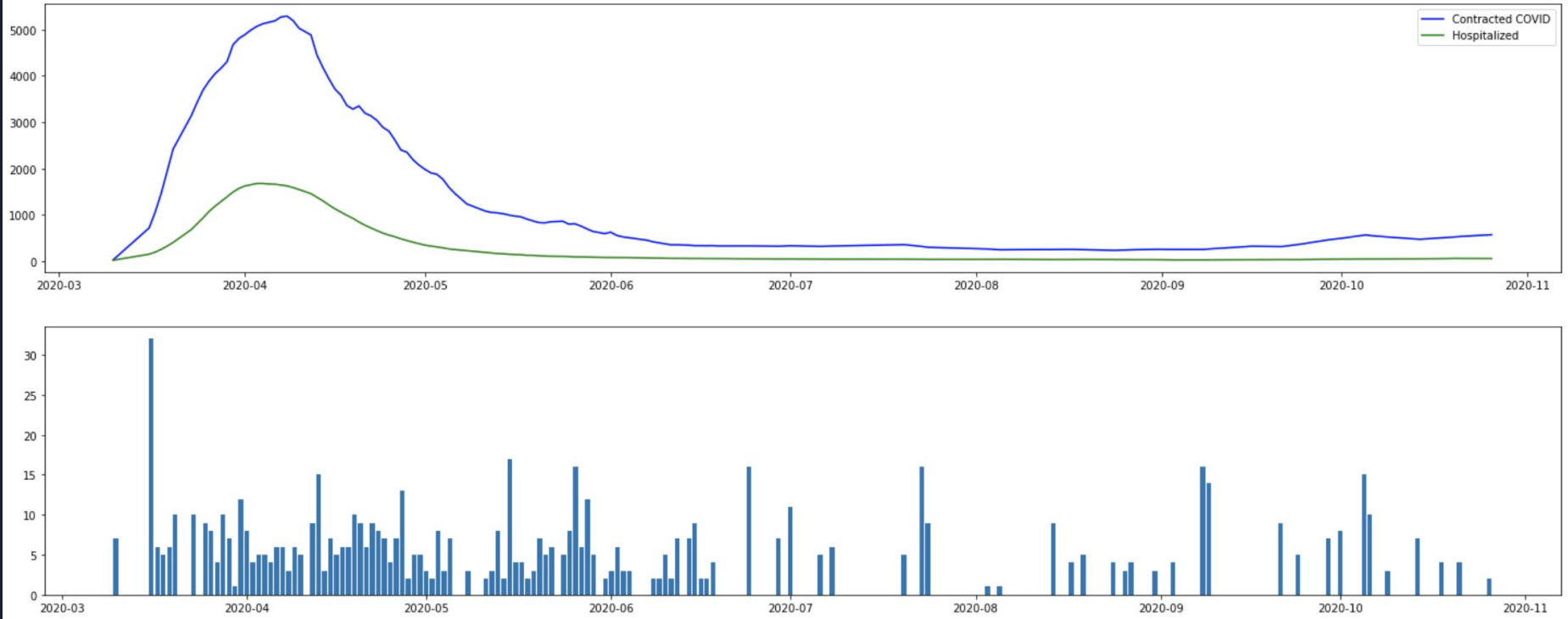
Hospitalization Stats Vs. Stats Driven Predictions & Planning



Hospitalization Stats Vs. Essential Services



Hospitalization Stats Vs. Reopening



Questions?



Appendix: Timeline of Events

| | |
|-----------------------|--|
| January 11, 2020 | China reports first COVID-19 death |
| January 21, 2020 | First confirmed COVID-19 case in the U.S. |
| January 30, 2020 | The W.H.O. declares a global health emergency |
| February 29, 2020 | First reported COVID-19 death in the U.S. |
| March 1, 2020 | First COVID-19 case in New York State |
| March 7, 2020 | NY Governor Andrew Cuomo declares a state of emergency |
| March 8, 2020 | NYC issues guidelines to avoid densely packed buses, subways, or trains |
| March 10, 2020 | Governor Cuomo orders containment zone in New Rochelle from March 12 to 25 |
| March 12, 2020 | Events with more than 500 people must be cancelled or postponed |
| March 12, 2020 | Broadway shuts down |
| March 13, 2020 | President Trump declares a national emergency |
| March 14, 2020 | First two COVID-19 deaths in NYS |
| March 15, 2020 | C.D.C. recommends no gatherings of 50+ in the U.S. |
| March 16, 2020 | NYC public schools close |
| March 17, 2020 | NYC bars and restaurants close, except for delivery |
| March 22, 2020 | NYS on Pause Program begins, all non-essential workers must stay home |
| March 27, 2020 | President signs the CARES Act |
| March 27, 2020 | U.S. reaches the most COVID-19 cases in the world |
| March 28, 2020 | Governor Cuomo halts all nonessential construction sites in NYS |
| March 30, 2020 | USNS Comfort arrives in NYC |
| March 31, 2020 | NYC passes 1,000 COVID-19 deaths |

| | |
|----------------------|---|
| April 6, 2020 | Governor Cuomo extends NYS's stay-at-home order and school closures to April 29 |
| April 10, 2020 | NYS records more COVID19 cases than any other country (besides U.S.) |
| April 15, 2020 | Governor Cuomo requires face masks or coverings in public places |
| April 16, 2020 | Governor Cuomo extends NYS's stay-at-home order and school closures to May 15 |
| April 30, 2020 | Governor Cuomo announces NYC subway closures from 1 a.m. to 5 a.m. |
| May 1, 2020 | Governor Cuomo closes all schools for the remainder of the academic year |
| May 7, 2020 | Governor Cuomo extends PAUSE order to June 6, but will allow counties to open by May 15 if they meet qualifications |
| May 14, 2020 | Governor Cuomo extends PAUSE order to May 28 for NYC and regions not meeting requirements to reopen |
| May 14, 2020 | State of emergency for NYS extended to June 13 |
| May 15, 2020 | Governor Cuomo allows drive-in theaters, landscaping, and low-risk recreational activities to reopen |
| May 23, 2020 | Governor Cuomo allows gatherings of up to 10 people with social distancing |
| May 27, 2020 | U.S. COVID-19 deaths pass 100,000 |
| June 8, 2020 | NYC begins Phase 1 reopening |
| June 22, 2020 | NYC begins phase 2 of reopening |
| June 24, 2020 | NY, NJ and CT require travelers to self-quarantine for 14 days if traveling from hot spots |

Appendix: Timeline of Events

| | |
|---------------------------|---|
| July 6, 2020 | U.S. COVID-19 deaths surpass 130,000 |
| July 6, 2020 | NYC begins Phase 3 of reopening, without indoor dining |
| July 19, 2020 | NYC begins Phase 4 reopening, excluding malls, museums and indoor dining/bars |
| July 24, 2020 | NYC reports 227,517 COVID-19 cases and 22,934 deaths to date |
| August 4, 2020 | NYC's health commissioner, Dr. Oxiris Barbot, resigns after voicing "deep disappointment" with Mayor Bill de Blasio's handling of the pandemic |
| September 2, 2020 | Gyms in NYC reopen, but indoor group workouts and pools stay closed |
| September 8, 2020 | Sheriff deputies begin stopping buses headed to Port Authority from hot spots, requiring quarantine forms to be signed |
| September 9, 2020 | Malls in NYC reopen at 50% capacity with no indoor dining. Casinos reopen across NYS at 25% capacity. |
| September 16, 2020 | Mayor de Blasio furloughs his City Hall staff, including himself |
| September 21, 2020 | Pre-K and advanced special-needs classes begin in-person learning in NYC |
| September 27, 2020 | The union representing NYC principals and school administrators delivers a unanimous "no confidence" vote days before students are set to return to schools |
| September 29, 2020 | Elementary students return to public school classrooms across NYC |
| September 30, 2020 | Indoor dining in NYC resumes with a 25% occupancy limit |

| | |
|------------------------|---|
| October 1, 2020 | NYC middle and high schools begin in-person learning. |
| October 2, 2020 | President Donald Trump and first lady Melania Trump test positive for coronavirus |
| October 4, 2020 | Mayor de Blasio says all schools and non-essential businesses will close in nine zip codes in Brooklyn and Queens, if approved by the state |
| October 5, 2020 | NYC reports 252,000 COVID-19 cases and 23,861 deaths to date |