Date:	Sunday, June 7 2020 12:32 PM
Subject:	Fwd: Privileged and Confidential
From:	Zucker, Howard A (HEALTH)
To:	Howard Zucker <[redacted]>;
Attachments:	image004.jpg; ATT00001.htm; image005.jpg; ATT00002.htm; image001.png; ATT00003.htm; 20200604 1413 Nursing home analysis-1.pdf; ATT00004.htm

Sent from my iPhone
Begin forwarded message:

From: "Adams, Eleanor H (HEALTH) " <[redacted]>
Date: June 7, 2020 at 11:34:18 AM EDT
To: "Zucker, Howard A (HEALTH) " <[redacted]>
Cc: "Bass, Michael G (HEALTH) " <[redacted]>
Subject: Privileged and Confidential

PRIVILEGED AND CONFIDENTIAL
DRAFT

Dr. Zucker,

Per your request, here is the nursing home data talking points. I attached the draft McKinsey analysis that you saw last week. Please call me so I can walk you through.

Main talking points:

- **(Simplified) Our data from early March – early May shows that the majority (55%) of NH residents with COVID-19 who died were exposed to prior to March 25th. Thus, the March 25th guidance likely did not drive nursing homes deaths.**
- **(Simplified) Admissions/readmission of residents with COVID-19 were increasing when the number of nursing home deaths were already decreasing. If the March 25th policy had been the driver, the death peak should have been after the peak in admissions, not before.**

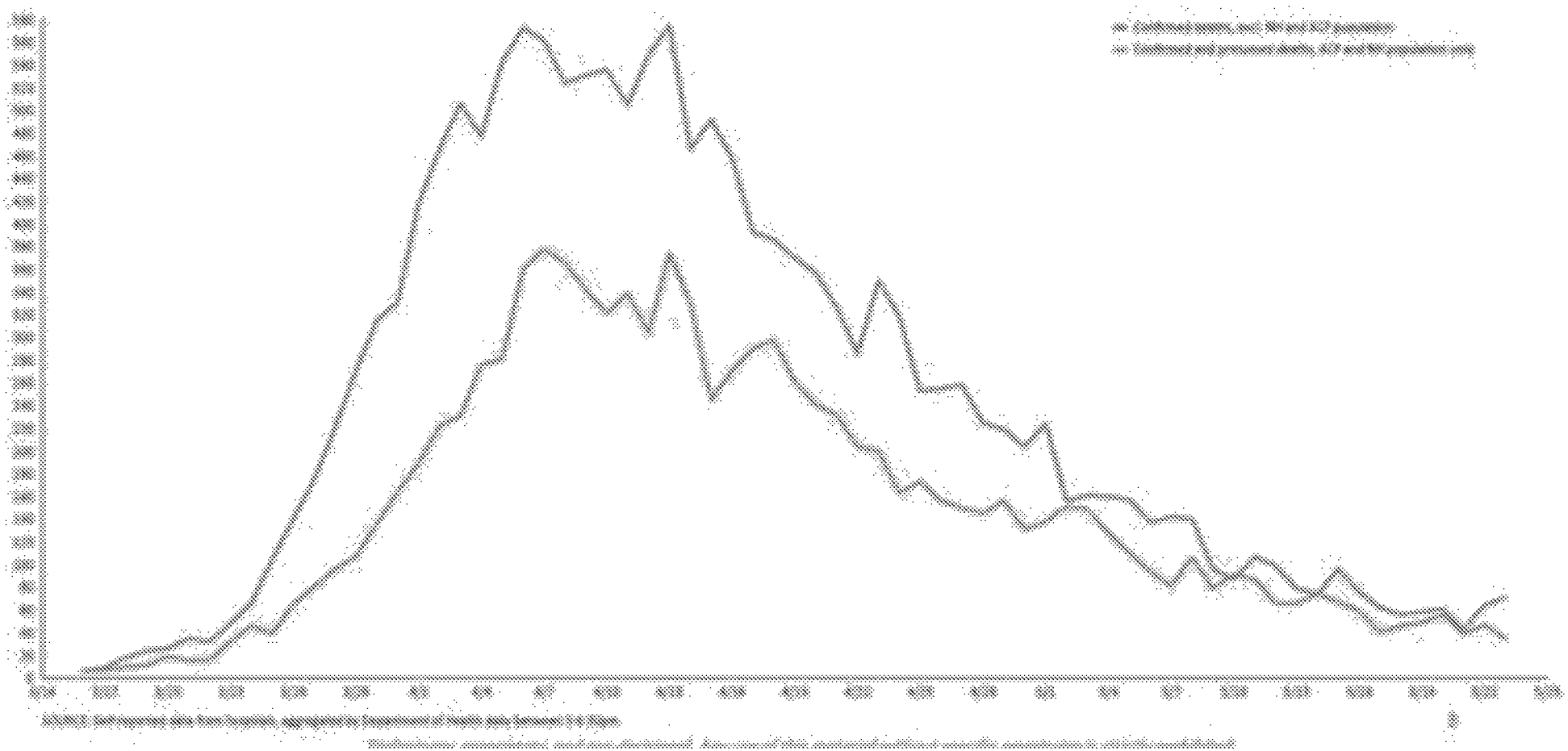
- (Detailed) The difference in directionality (increasing number of admissions to nursing homes of residents with COVID-19 at a time when the number of deaths in nursing home residents was decreasing), coupled with the known delay between onset of symptoms and death, shows that readmissions/admissions of residents with COVID-19 to nursing homes was not likely a driver of the number of deaths in nursing homes.
- (Detailed) The death curve for nursing home residents is the same shape as the overall New York death curve for all residents, and is not the curve one would expect if admissions/readmissions were causing the deaths (which would show a peak AFTER the majority of admissions/readmissions, not BEFORE).

Details:

- The death curve for nursing home residents is the same shape as the overall New York death curve for all residents, and is not the curve one would expect if admissions/readmissions were causing the deaths (which would show a peak AFTER the majority of admissions/readmissions [April 14-21], not before).

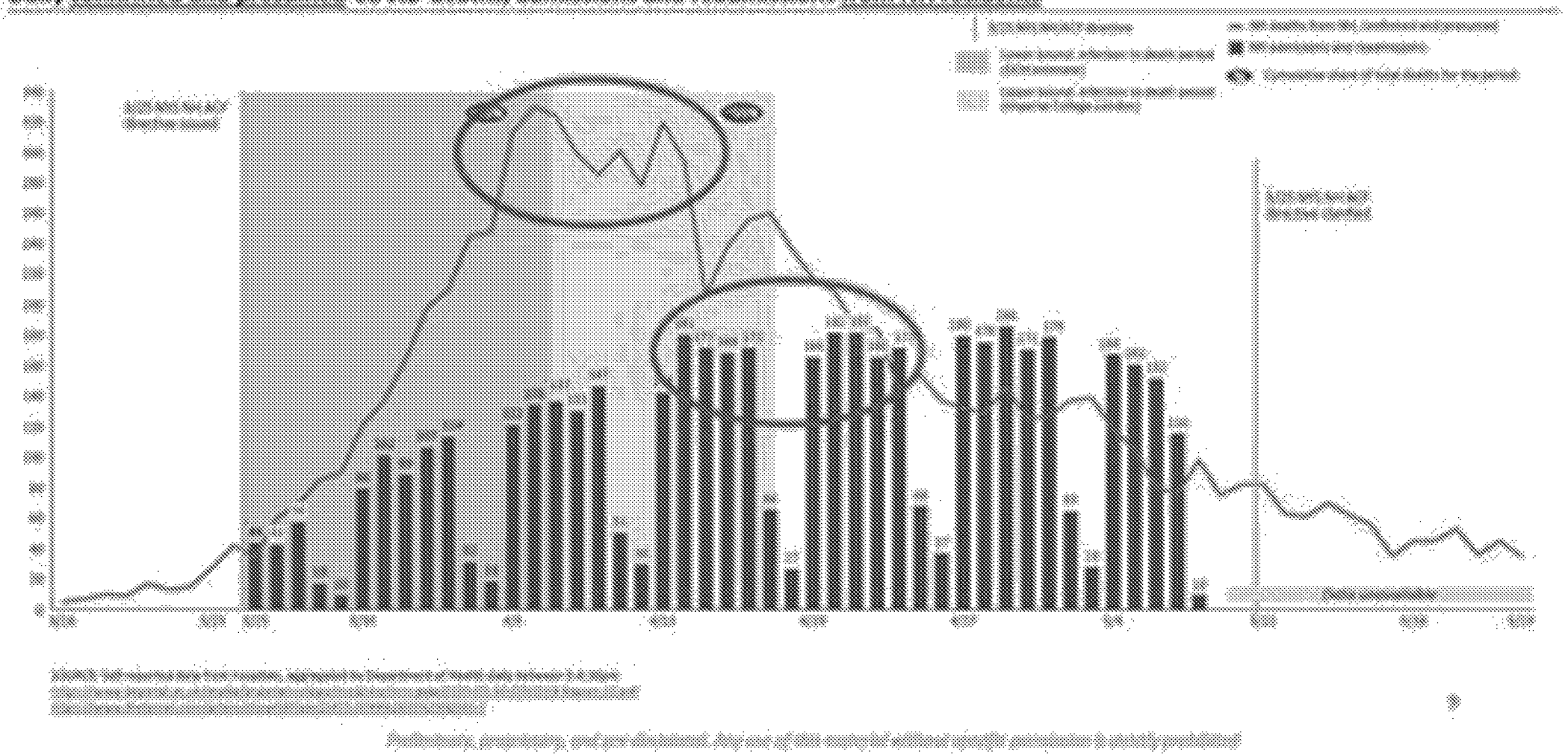
Statewide COVID deaths overtime

Total daily COVID deaths by date of occurrence, #



- NYS nursing home data shows that nursing home COVID deaths peaked April 7, 2020, with a subsequent gradual decline. Admissions/readmissions of confirmed and presumed residents with COVID-19 from hospitals to nursing homes peaked on April 21, 2020, although there is a plateau that begins on April 14, 2020.
- The majority of admissions/readmission of residents with COVID-19 occurred when the number of nursing home deaths were already declining. If the March 25th policy had been the driver, the peak of deaths should have been after the peak in admissions, not before.

Daily confirmed and presumed COVID deaths, admissions and readmissions from NH residents



- CDC chart review and data analysis for deceased residents with COVID in March 2019 revealed that the median duration from COVID-19 symptom onset to death was 7 days in these nursing homes. This suggests that the peak date of exposure for nursing home residents was likely 7-21 days prior to the date nursing home deaths peaked.

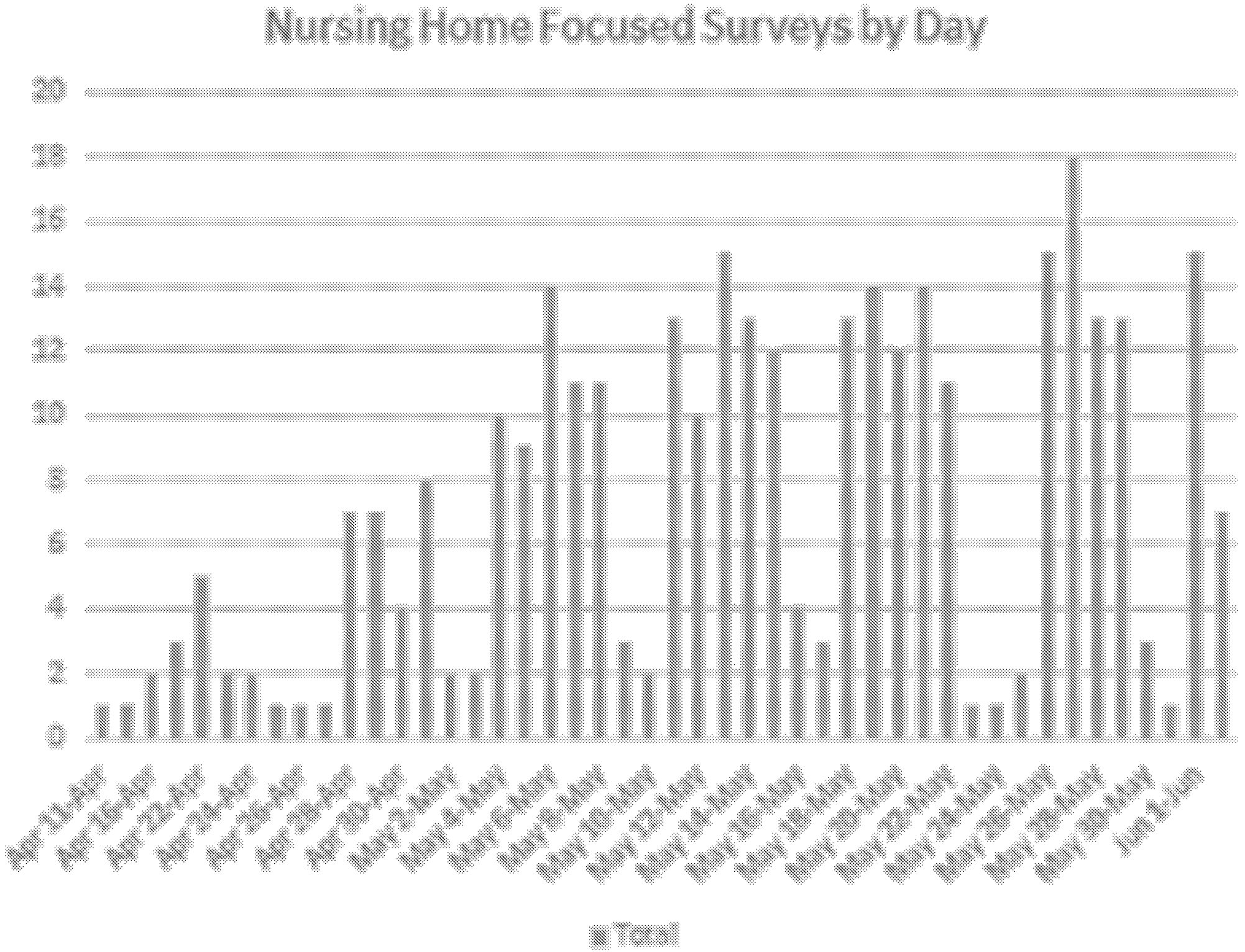
  From the literature (not necessarily nursing home residents), typically reported as the median:

  - Hospital admission to death: 7-8 days (Buckner et al.)
  - ICU to death: 7 days (Yang et al.)
  - Onset to death: 18.5 days (Zhou et al.)
  - Onset to death: 23 days (Wang et al.)
  - Incubation period (mean): 5 days (He et al., meta-analysis)

  If we use 7 days from onset to death (internal NY data) and the data above for mean incubation period of 5 days, and we assume that the incubation period is normally distributed (a reasonable assumption), that implies that the peak date of exposure in people who died occurred at about March 26, only one day after the relevant guidance and well before that guidance could have had an appreciable effect. Also, this uses a rather short time interval of 7 days from onset to death – we don't know if the data from the chart review is generalizable. Most data from the literature shows a longer time period from onset to death, although admittedly it's not limited to nursing home residents as is the number quoted.

- The difference in directionality (increasing number of admissions of residents with COVID-19 with a decreasing number of COVID deaths of nursing home residents), coupled with the a week (7-day) difference between onset of symptoms to death for nursing home residents, shows that readmissions/admissions of residents with COVID-19 to nursing homes was likely not a driver of the number of deaths in nursing homes.

- During the time when the nursing death curve was decreasing, NYSDOH was aggressively conducting infection control surveys:



Eleanor

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Nursing home and ACF analyses

Discussion document

6/04

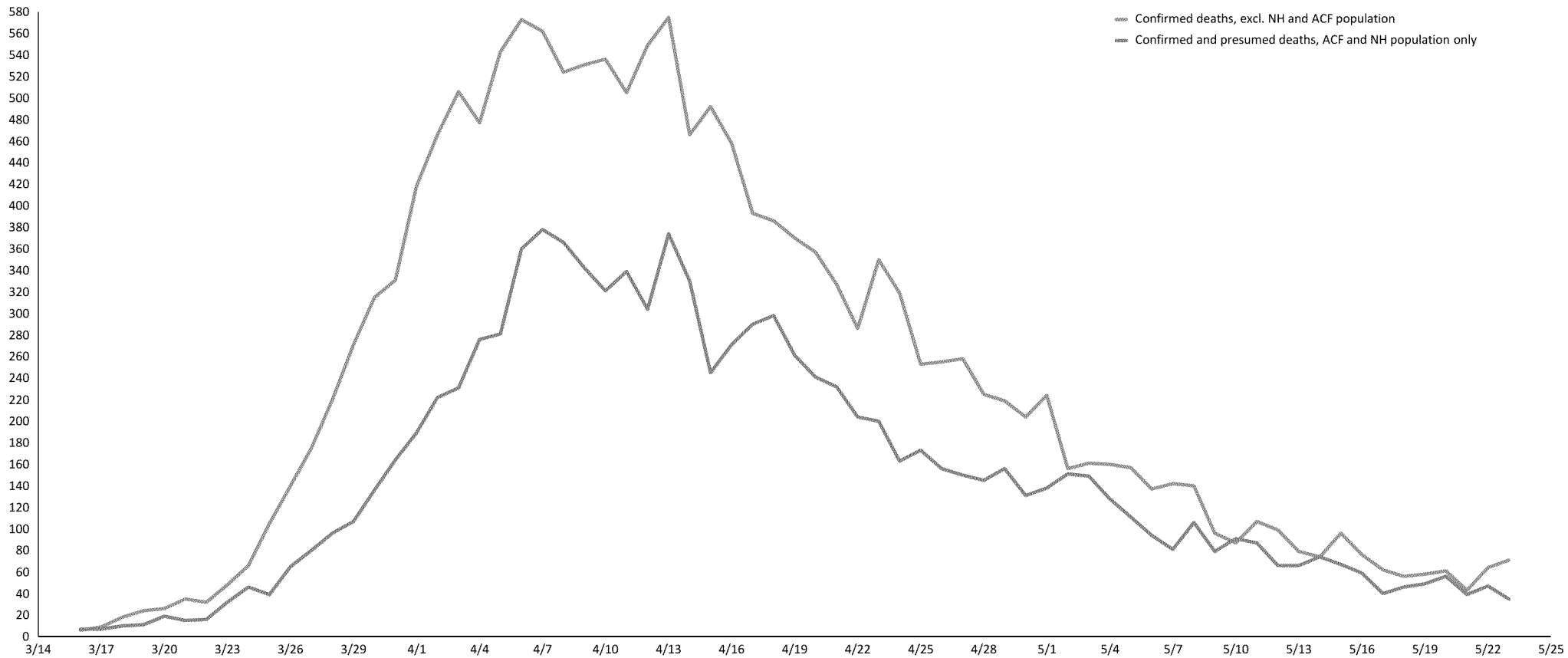
Overview of the nursing home and ACF death

Discussion on potential relationship between deaths with:

- (Re)admissions
- Facility rating

Statewide COVID deaths over time

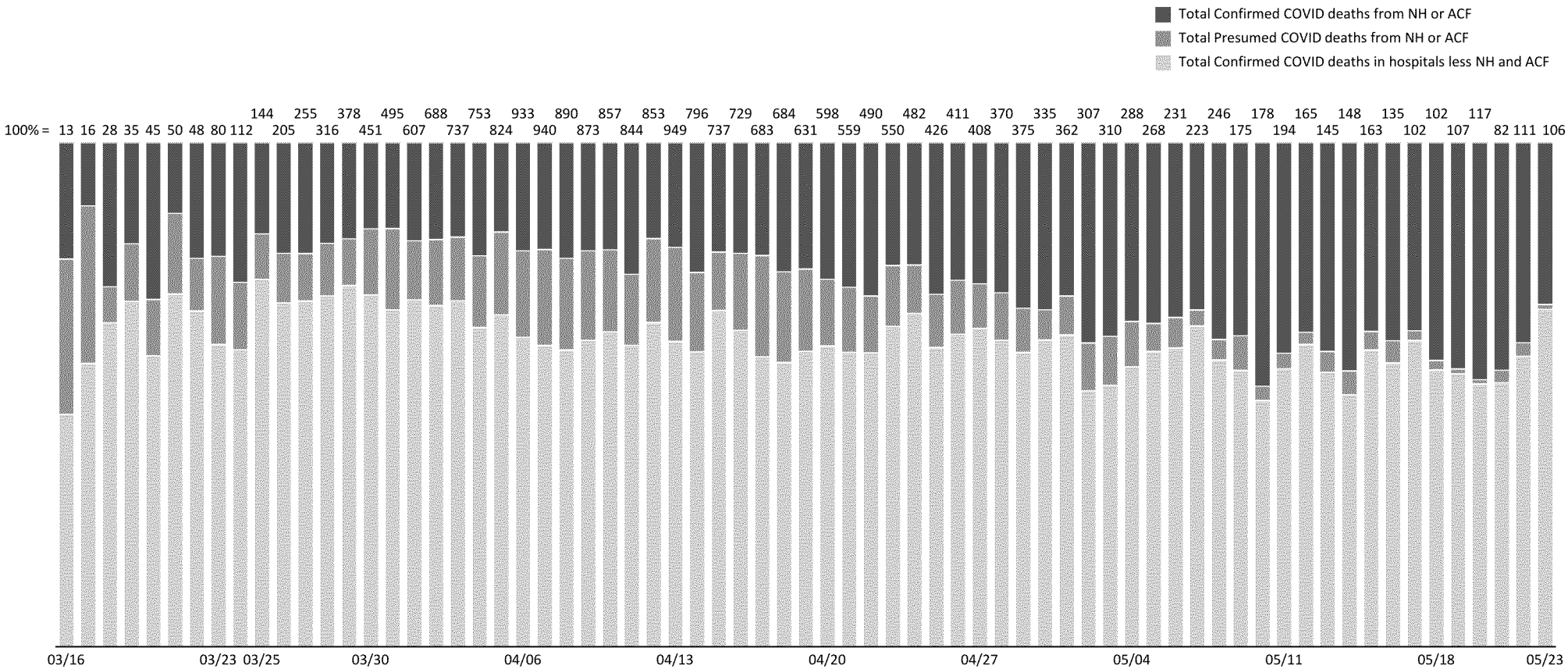
Total daily COVID deaths by date of occurrence,



SOURCE: Self-reported data from hospitals, aggregated by Department of Health daily between 5-6:30pm

Statewide deaths confirmed and presumed breakdown

New COVID deaths by date of occurrence, confirmed & presumed,



SOURCE: Self-reported data from hospitals, aggregated by Department of Health daily between 5-6:30pm

Stratification rate by population segment

	Population	Fatalities	Share of Population	Share of Fatalities	Average rate of COVID-related deaths by group, %
New York State	19,542,209	27,534	100%	100%	0.1%
NYS population 70+ outside NH/ACF	2,093,576	12,187	11%	44%	0.6%
NYS population inside NH/ACF	102,895	10,373	1%	38%	10.1%

SOURCE: Self-reported data from NH/ACF, hospitals, aggregated by Department of Health daily between 5-6:30pm; and US Census

NH and ACF deaths by region, confirmed and presumed

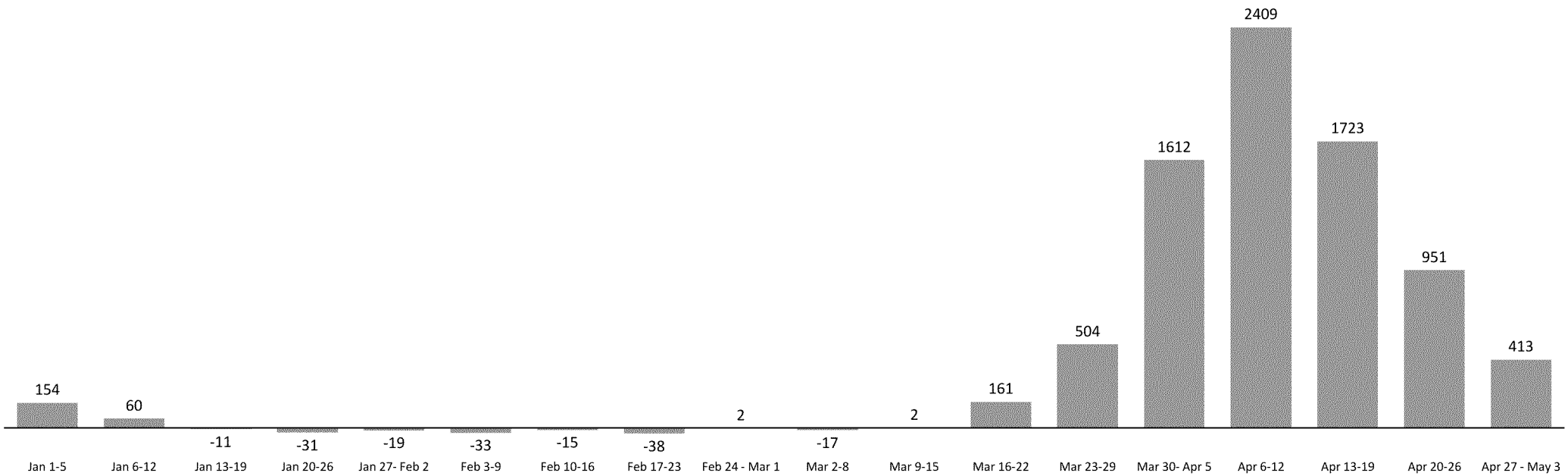
Region	Total confirmed and presumed deaths	NH / ACF in-house population	Death rate (confirmed & presumed)
New York City	5,878	39,733	15%
Long Island	2,151	16,078	13%
Mid-Hudson	1,382	13,111	11%
Western New York	369	8,030	5%
Capital Region	186	5,726	3%
Finger Lakes	196	6,572	3%
Central New York	88	3,880	2%
Southern Tier	74	3,954	2%
Mohawk Valley	49	3,832	1%
North Country	0	1,449	0%
Grand Total	**10,373**	**102,895**	**10%**

SOURCE: Self-reported data from hospitals, aggregated by Department of Health daily between 5-6:30pm

Statewide trends of excess deaths

Total excess deaths by week of occurrence,

STATEWIDE



SOURCE: Self-reported data from hospitals, aggregated by Department of Health daily between 5-6:30pm

Content

Overview of the nursing home and ACF death

Discussion on potential relationship between deaths with:

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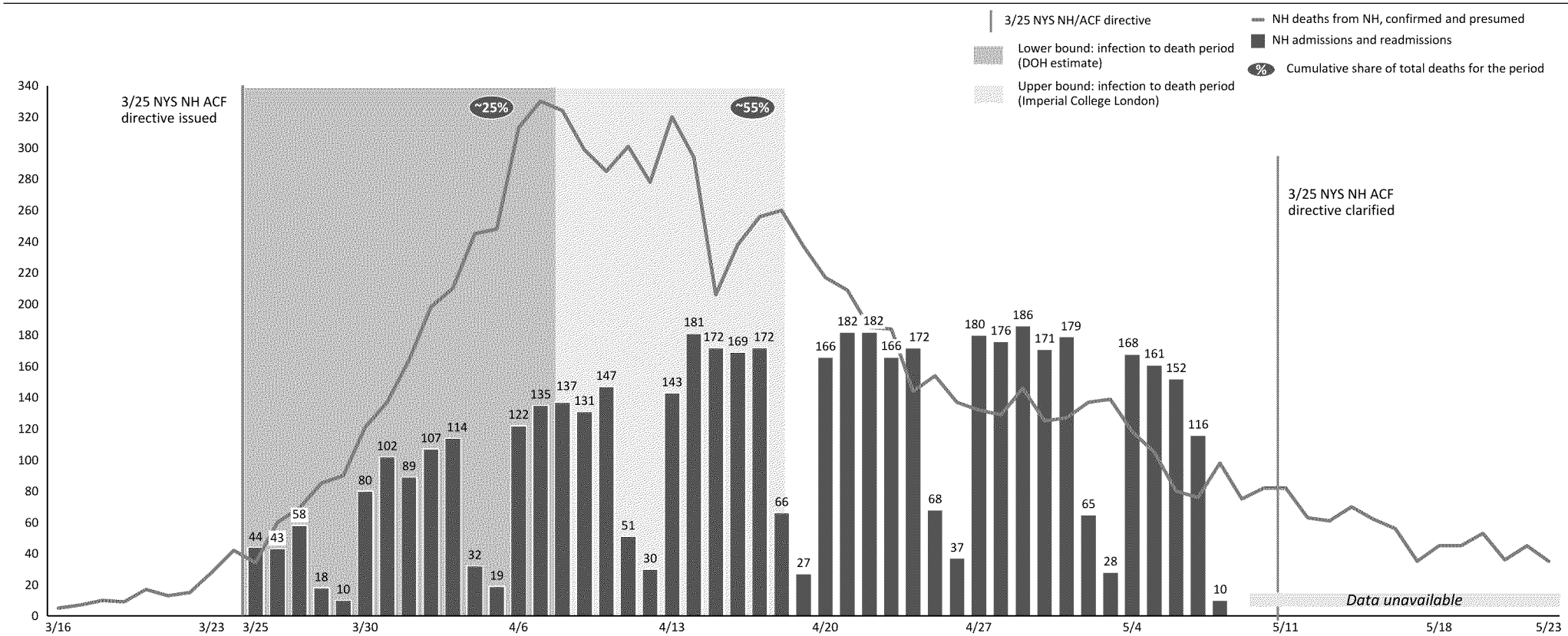
Daily confirmed and presumed COVID deaths, admissions and readmissions from NH residents

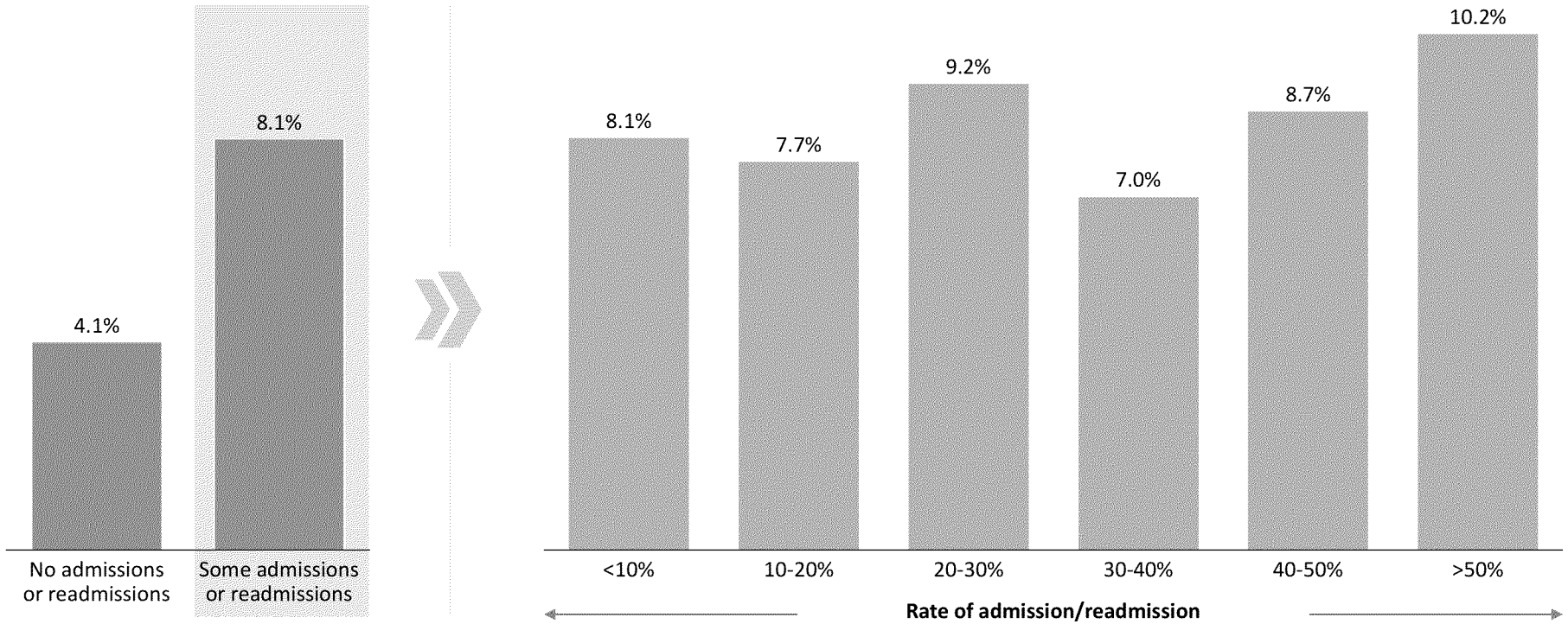


SOURCE: Self-reported data from hospitals, aggregated by Department of Health daily between 5-6:30pm
https://www.imperial.ac.uk/media/imperial-college/medicine/mrc-gida/2020-03-30-COVID19-Report-13.pdf
https://www.thelancet.com/action/showPdf?pii=S1473-3099%2820%2930243-7

Stratification of deaths by admission/readmission

Average mortality rate by level of admissions/readmissions[1], %

Controlled: Includes only deaths after April 16th and removed facilities with no COVID positive case



Number of facilities	45	330	116	112	49	23	17	13

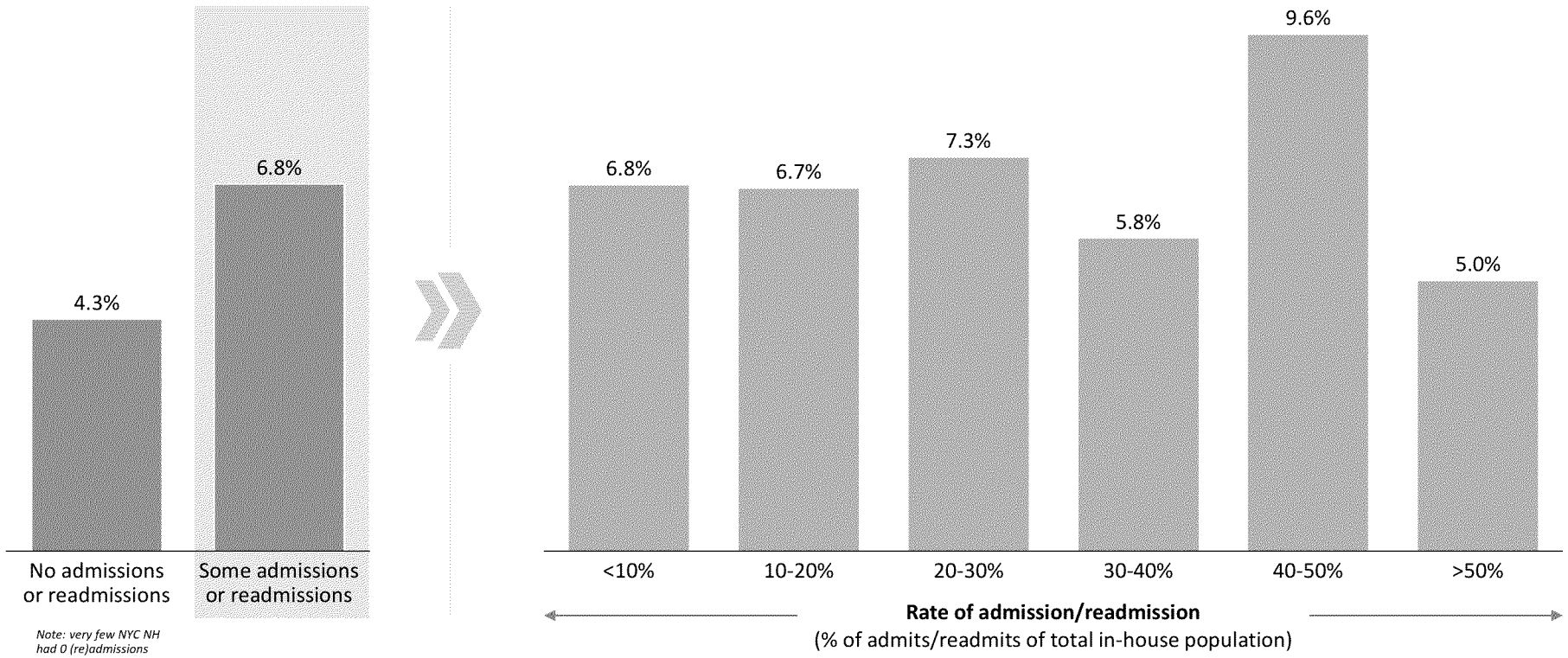
1. "Average mortality rate" defined as the number of COVID (confirmed and presumed) patients that have passed away over total in-house census population; "level of admissions/readmissions" defined as rate of admissions/readmissions out of total

SOURCE: Self-reported data from hospitals, aggregated by Department of Health daily between 5-6:30pm

NYC breakout of deaths by admissions/readmissions

Average mortality rate by level of admissions/readmissions[1], %

Controlled: Includes only deaths after April 16th and removed facilities with no COVID positive case

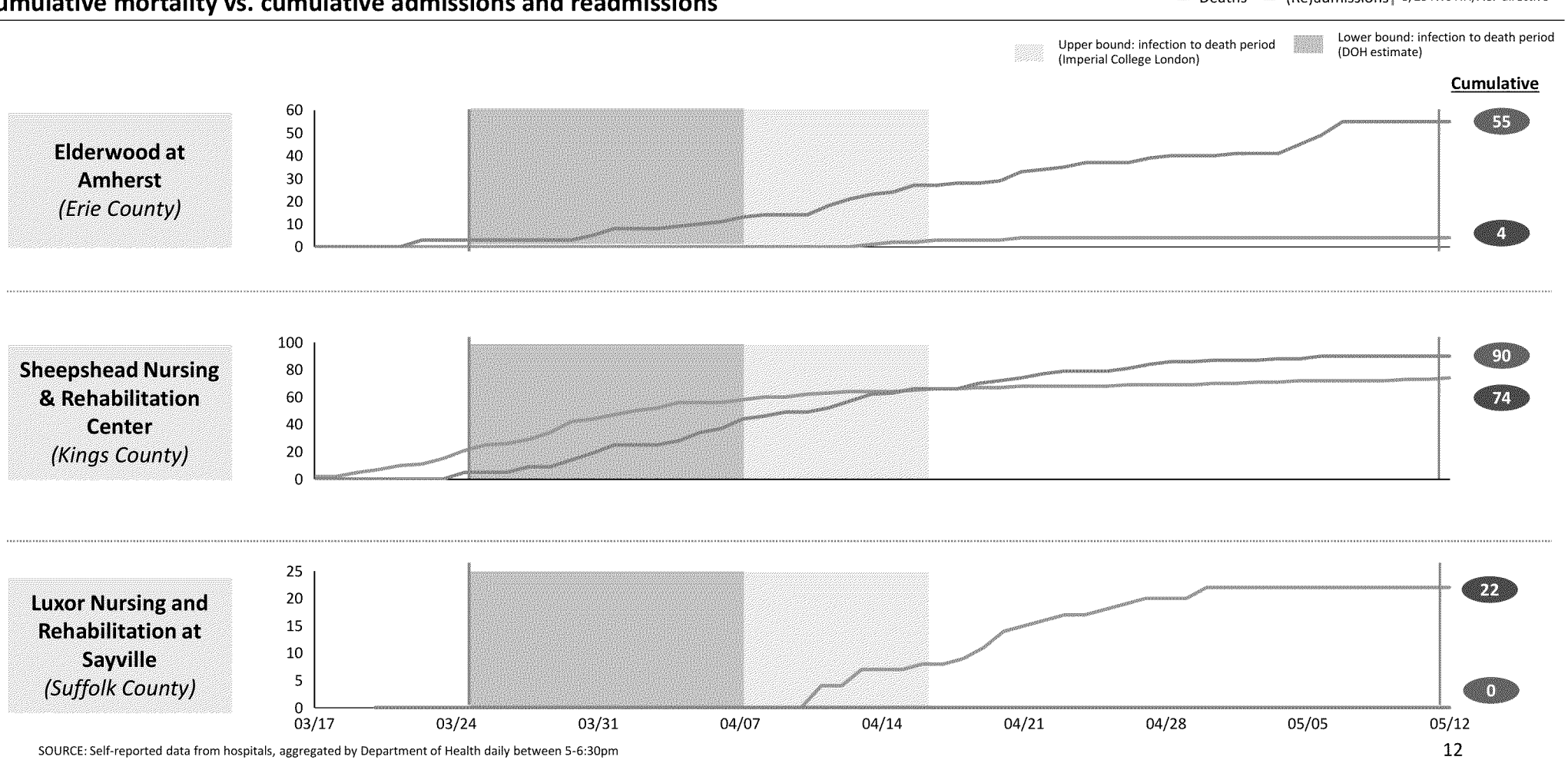


Number of facilities	4	151	37	59	20	18	10	7

1. "Average mortality rate" defined as the number of COVID (confirmed and presumed) patients that have passed away over total in-house census population; "level of admissions/readmissions" defined as rate of admissions/readmissions out of total

SOURCE: Self-reported data from hospitals, aggregated by Department of Health daily between 5-6:30pm

Cumulative mortality vs. cumulative admissions and readmissions



SOURCE: Self-reported data from hospitals, aggregated by Department of Health daily between 5-6:30pm

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Statewide variation of NH quality and mortality

STATEWIDE

	1	2	3	4	5
Number of NH	97	104	109	130	160
Average Population	124	149	163	140	143
Total capacity	15,509	19,548	22,619	23,191	30,714
Total population	12,070	15,453	17,740	18,257	22,869
Occupancy	78%	79%	78%	79%	74%
Confirmed and presumed COVID deaths	794	1,266	2,182	1,811	3,179
Mortality rate	7%	8%	12%	10%	14%

Note: 12 Nursing homes did not provide ratings

SOURCE: Self-reported data from hospitals, aggregated by Department of Health daily between 5-6:30pm

Statewide variation of NH quality distribution by region

STATEWIDE

		% rated by group	
	# of facilities	Rated 1 to 2	Rated 4 to 5
New York City	164	20%	58%
Long Isand	75	19%	61%
Mid-Hudson	75	24%	51%
Rest of State	111	61%	31%

SOURCE: Self-reported data from hospitals, aggregated by Department of Health daily between 5-6:30pm