

The Effect of COVID-19 Vaccinating Health Professionals Prior to Patients

JACOB H, LAUREN H, ETHAN R, DAVID W*

Abstract

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetur id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

I. INTRODUCTION

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla

vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismod nunc eu purus. Donec bibendum quam in tellus. Nullam cursus pulvinar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque felis eu massa.

II. METHODS

I. Model Methods

General process of how the guys created the model. What they chose as parameters, why they chose specific set-up/ structure etc.

- software used
- Thought process, planning
- architecture of model chosen and why
- how/why parameters were chosen
- optimization methods
- 1-D model set up
- 2-D model set up

II. Data Analysis Methods

Process and methods used to gather and then analyze the data. How we ruled out factors, how we ruled in factors, process of elimination etc.

*A thank you or further information

- Where is data from
- How we got it
- Pipeline analysis set-up
- types of plots generated
- Analysis after plots– how we determined "significance" in event analysis
- What constitutes ruling in a parameter; ruling out a parameter
- What constitutes a likely conclusion

III. RESULTS

I. Model Results

I.1 Jake's Model Results

I.2 Ethan's Model Results

II. Data Analysis Results

II.2 State-Level Data Analysis Results

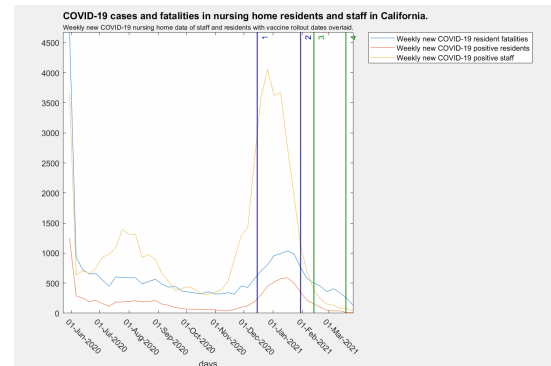


Figure 2: Roughly 2 weeks after release of the first COVID-19 vaccine, new COVID-19 cases in nursing home staff in California begins to decline, followed by a reduction in COVID-19 cases and fatalities in residents approximately 2 weeks later.

II.1 National-Level Data Analysis Results

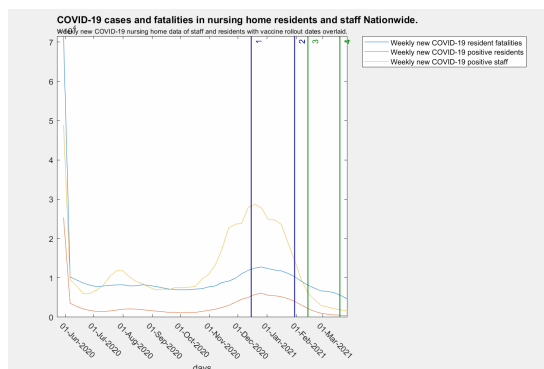


Figure 1: The distribution of the first COVID-19 vaccine immediately reduced new COVID-19 cases in nursing home staff Nationwide, followed by a similar reduction in nursing home residents approximately 2 weeks later.

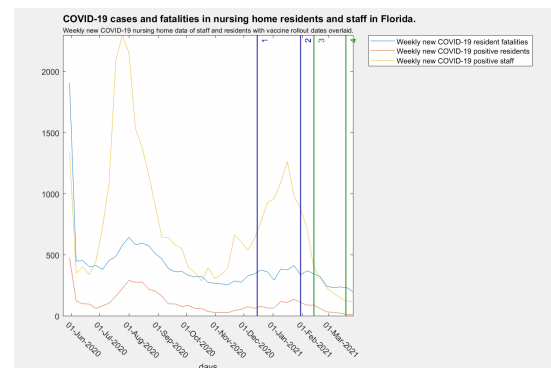


Figure 3: Approximately 4 weeks after the distribution of the first COVID-19 vaccine, new COVID-19 cases in nursing home staff in Florida begin to decline, and COVID-19 cases and fatalities in nursing home residents remained constant for nearly 3 months after the first wave of vaccine distributions before declining.

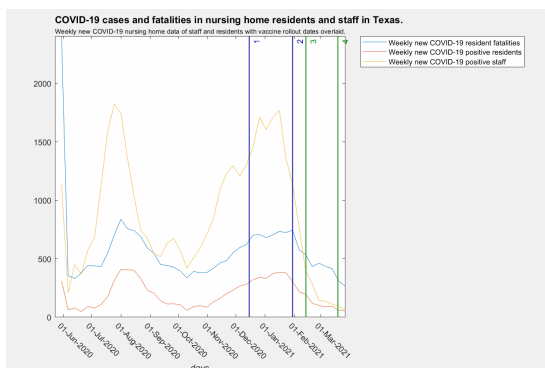


Figure 4: Approximately 4 weeks after the release of the first COVID-19 vaccine, new COVID-19 cases in nursing home staff in Texas began to decline, followed by a decline in COVID-19 cases and fatalities in nursing home residents approximately 1 week later.

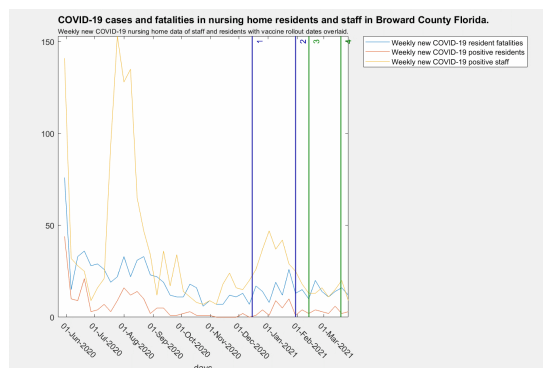


Figure 6: Approximately 2 weeks after COVID-19 vaccine distribution begins, new COVID-19 cases in nursing home staff begin to decline in Broward County Florida, while COVID-19 cases and fatalities in nursing home residents remain constant, displaying no change.

II.3 County-Level Data Analysis Results



Figure 5

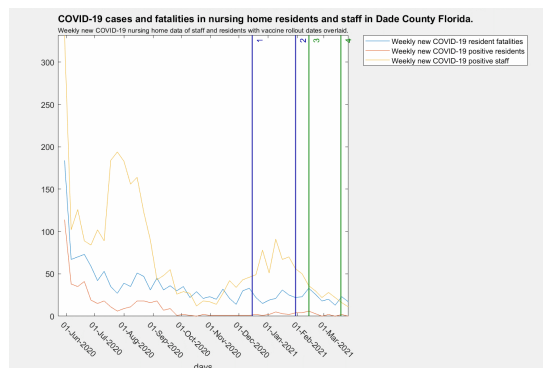


Figure 7: Nearly 4 weeks after COVID-19 vaccine distribution begins, new COVID-19 cases in nursing home staff begin to decline in Dade County Florida, while COVID-19 cases and fatalities in nursing home residents remain constant with a slight display in decline approximately 1 month after staff decline.

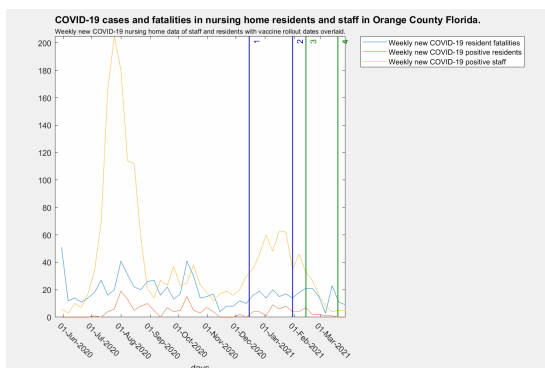


Figure 8: Approximately 5 weeks after the start of COVID-19 vaccine distribution, new COVID-19 cases in nursing home staff begin to decline in Orange County, Florida, while COVID-19 cases and fatalities in nursing home residents decline approximately 1 month after staff decline.

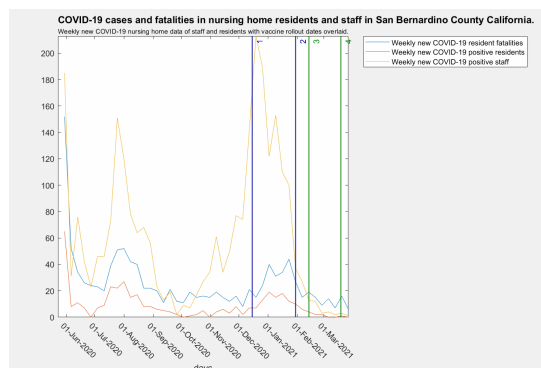


Figure 10: The release of the first COVID-19 vaccine is followed by a reduction in new COVID-19 cases in nursing home staff in San Bernardino County, California within 3 weeks, followed by a decline in COVID-19 cases and fatalities in nursing home staff approximately 1 week later.

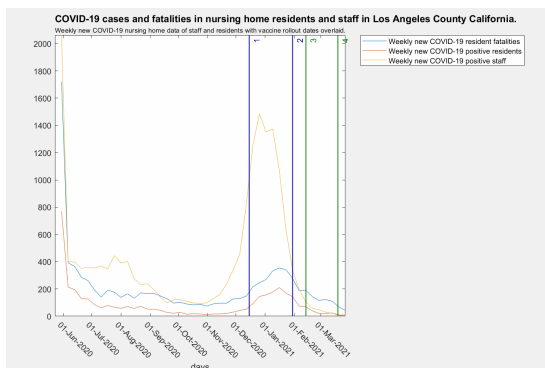


Figure 9: The release of the first COVID-19 vaccine is followed by a reduction in new COVID-19 cases in nursing home staff in Los Angeles County, California approximately 3 weeks after distribution; succeeded by a reduction in COVID-19 cases and fatalities in nursing home residents approximately 1 week later.

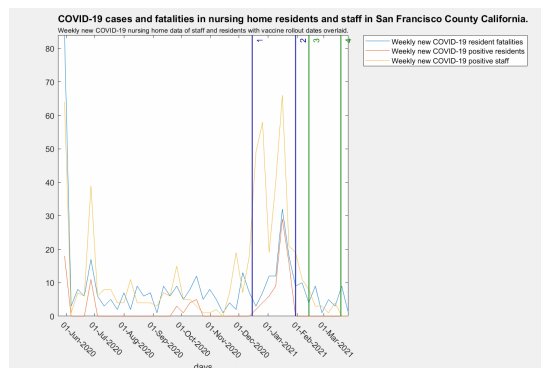


Figure 11: Approximately 4 weeks after the distribution of the first COVID-19 vaccine, new COVID-19 cases in nursing home staff in San Francisco County, California begin to decline, followed by a decline in COVID-19 cases and fatalities in nursing home residents less than one week later.

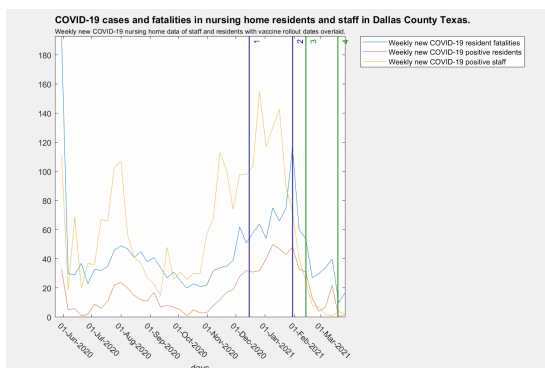


Figure 12: New COVID-19 cases in nursing home staff in Dallas County, Texas begin to decline approximately 4 weeks after the distribution of the first COVID-19 vaccine, followed by the decline in COVID-19 cases and fatalities in nursing home residents approximately 2 weeks later.

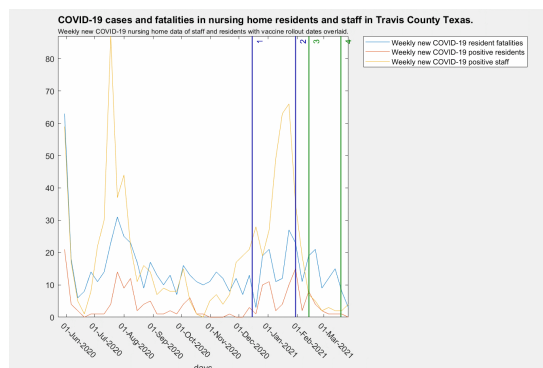


Figure 14: New COVID-19 cases in nursing home staff in Travis County, Texas begin to decline approximately 5 weeks after the distribution of the first COVID-19 vaccine, followed by the decline in COVID-19 cases and fatalities in nursing home residents approximately 2 weeks later.

III. Vaccinations in general public 65+ and in assisted living facility residents

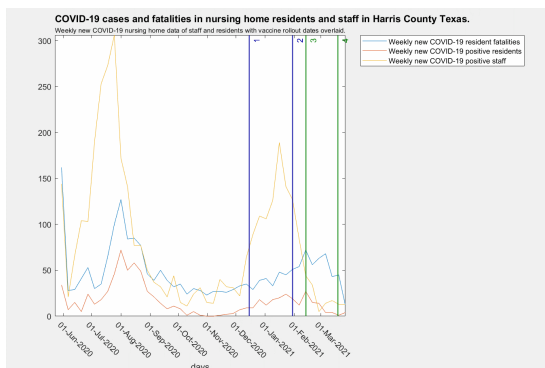


Figure 13: New COVID-19 cases in nursing home staff in Harris County, Texas begin to decline approximately 5 weeks after the distribution of the first COVID-19 vaccine, followed by the decline in COVID-19 cases and fatalities in nursing home residents approximately 2 weeks later.

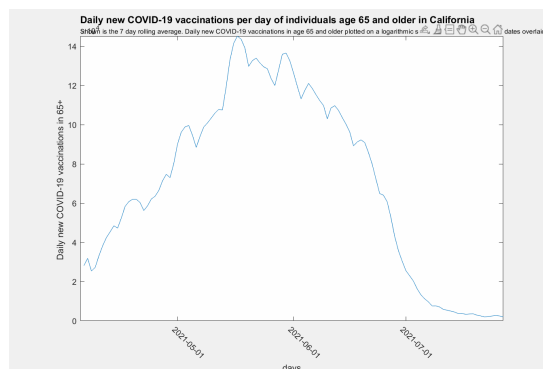


Figure 15

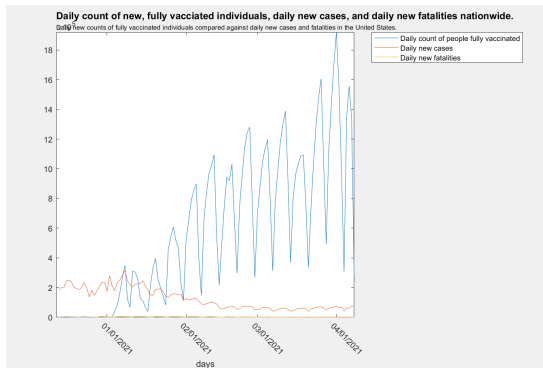


Figure 16

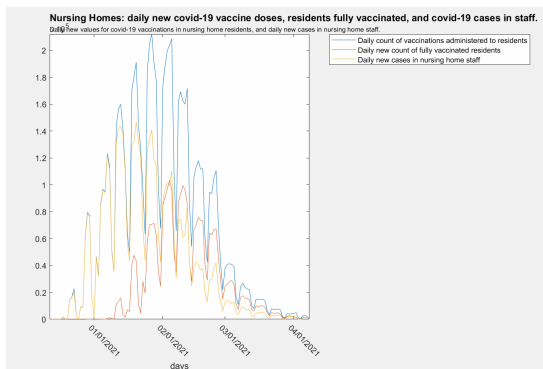


Figure 17

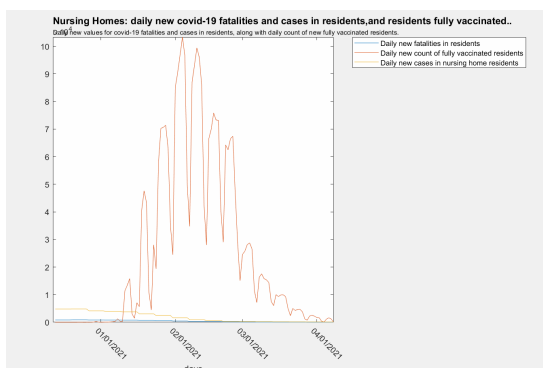


Figure 18

IV. Nursing Home Statistics

1. Histogram w/ scatterplot
2. Pie Chart?
3. Graph chart for comparison?

IV. DISCUSSION

I. Model Discussion

1. Jake's model
2. Ethan's model

II. Event Analysis Discussion

The effectiveness of vaccinating the population against COVID-19 is undeniably positive, and is apparent through the decline in the presence of COVID-19 within the nursing home setting at the National, State, and County level.

1. Nationwide has declined
2. California & Texas have declined; Florida residents remain constant– weird.
3. by the time 80-90% of first dose has been delivered, everyone is at low levels for COVID-19 in nursing home
4. health professionals are vectors
5. vaccinating health professionals first, and earlier saves lives faster
- 6.

REFERENCES

[Figueredo and Wolf, 2009] Figueredo, A. J. and Wolf, P. S. A. (2009). Assortative pairing and life history strategy - a cross-cultural study. *Human Nature*, 20:317–330.