Rachel Donahue

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**Personal Statement:**

After completing the MSSP program, I intend to pursue a career in data science and statistics in healthcare. Medicare is one of the biggest drivers of the US healthcare system, with about 62.6 million people enrolled in the program as of 2020 and that population is expected to increase by 50% over the next decade.[[1]](#footnote-1) Getting experience modeling that data would be beneficial for my career, as it will be something that I will likely encounter later on.

**Question:**

My preliminary data analysis question is “Is there a trend in the number of influenza vaccine administrations within states over time for the Medicare population”? Depending on how manageable the dataset is, I will look from 2013-2019 at the number of influenza vaccines administered per provider in various parts of the US. Even though influenza cases were sharply reduced from typical levels in 2020 due to emergency public health measures enacted to mitigate the spread of COVID-19, I think this is still an important question to explore since influenza rates may return to normal in the coming seasons[[2]](#footnote-2).

**Data Sources:**

The data set I am planning on using is from the Center for Medicaid and Medicare (CMS) website:<https://data.cms.gov/provider-summary-by-type-of-service/medicare-physician-other-practitioners/medicare-physician-other-practitioners-by-provider-and-service/data/2019> This dataset is broken out by National Provider Identifier (NPI) number, and contains the number of beneficiaries per vaccine service item for each NPI number. This dataset is available for the years 2013-2019, and it contains various geographic variables such as state that I can use to fit a multilevel model. I plan to filter the dataset for HCPCS\_Desc containing the words “vaccine” and “flu” to subset down to influenza vaccine administration.

**Proposed Timeline of work:**

EDA: Completed by November 11th

Data Processing: Completed by November 18th

Modeling and Validation: Completed by November 23rd

Write up: Completed by December 2nd

1. *A Dozen Facts About Medicare Advantage in 2020*. (2021, January 13). KFF. https://www.kff.org/medicare/issue-brief/a-dozen-facts-about-medicare-advantage-in-2020/ [↑](#footnote-ref-1)
2. *Upcoming 2020–2021 Influenza Season*. (2021, October 25). Centers for Disease Control and Prevention. https://www.cdc.gov/flu/season/faq-flu-season-2020-2021.htm [↑](#footnote-ref-2)