

An Assessment of Current Vaccinations Rates of Hospitalized Patients Who Have Myasthenia Gravis

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Hunter Hewitt Capstone Poster Presentation



An Assessment of Current Vaccinations Rates of Hospitalized Patients Who Have Myasthenia Gravis

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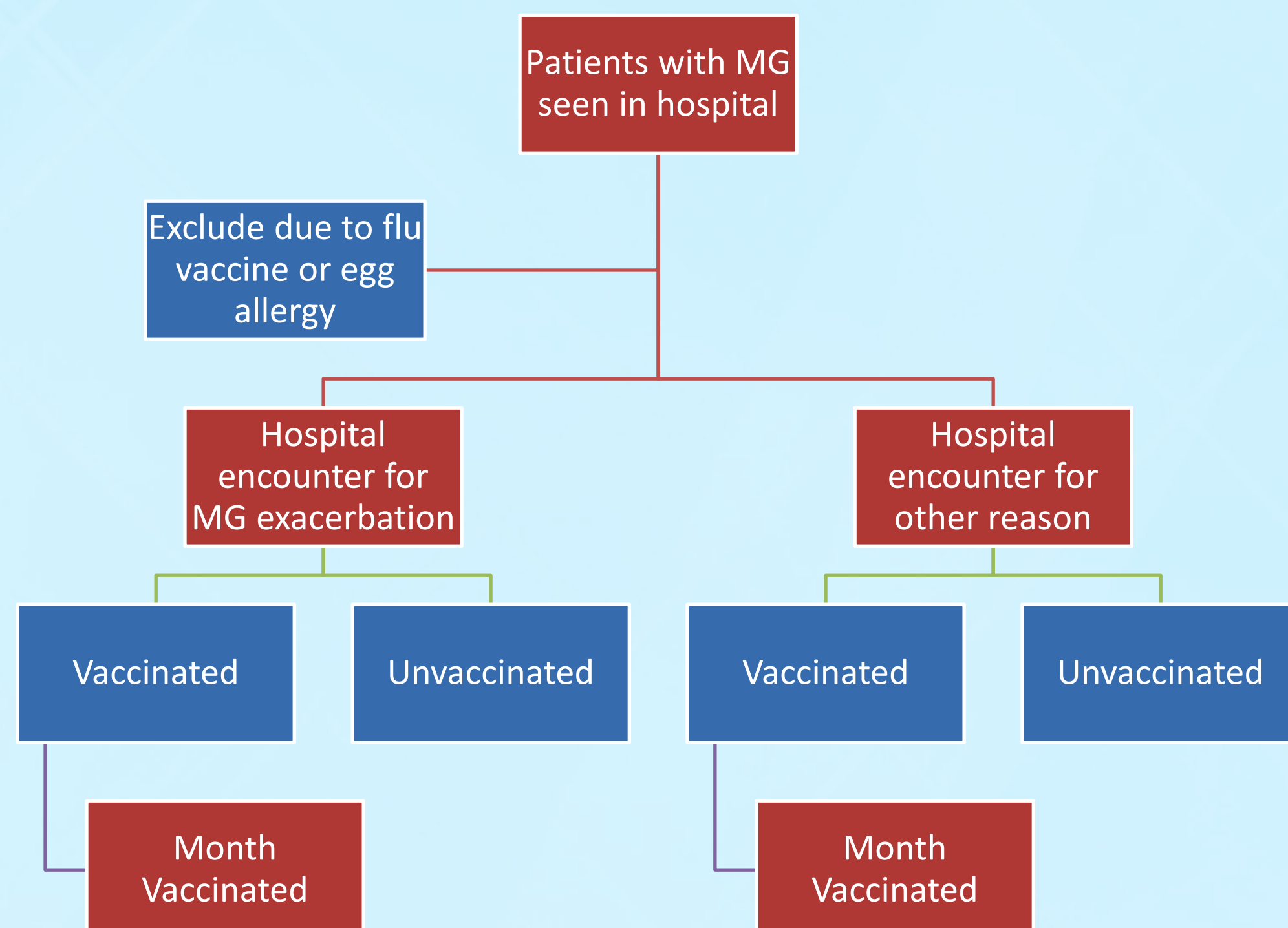
Background

- Myasthenia gravis (MG) is an autoimmune disease characterized by weakness that increases with activity and improves with rest¹.
- Myasthenia Gravis generally worsens over a few years and often progresses to affect the muscles of diaphragm leading to difficulty breathing¹.
- Because Myasthenia is a disease of the immune system one of the largest mainstays of treatment is immunosuppression².
- A complication of immune suppression is increased susceptibility to infections³.
- In particular, influenza infection has higher morbidity and mortality in those who are immunosuppressed compared to the general population³.
- Those who are immunocompromised also take longer to resolve the illness, leading to increased risk of complication as well as increasing the chance that they could spread the flu³.
- In multiple studies of both yearly flu vaccination as well as H1N1 specific vaccination for patients with MG, safety has been established^{4,5,6}.
- 40% of Myasthenic patients who contract an influenza-like illness have worsening symptoms and fatigue⁷.
- Current guidelines for flu vaccination recommend getting the flu shot by the end of October⁸.
- The CDC's goal for flu vaccination is 90% or greater in adults aged 18 and older⁹.
- The average vaccination coverage of U.S. adults over 18 years of age was 45.3%⁹.

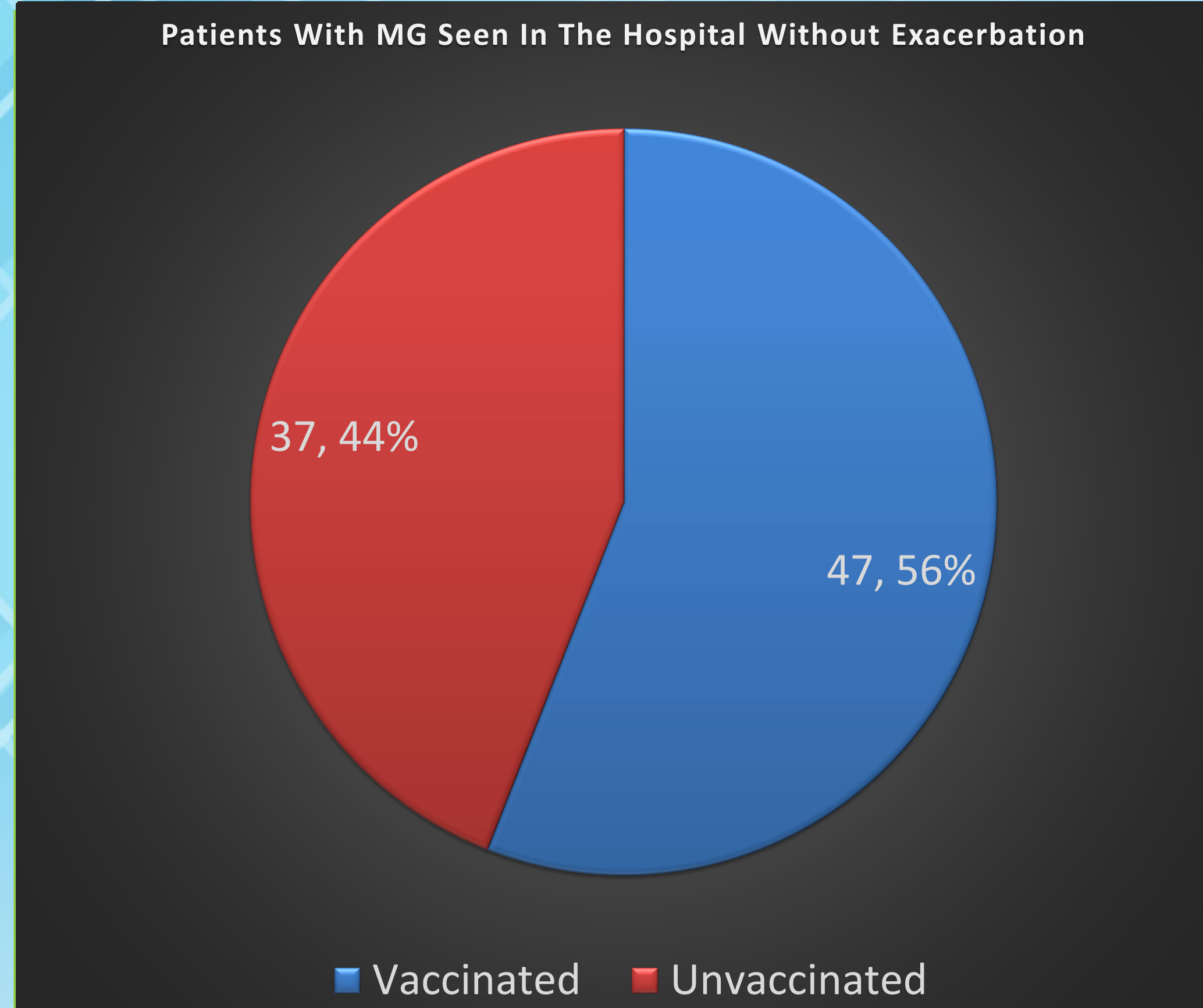
Problem Statement

The goal of this study is to understand the timing and rate of flu vaccination for patients with Myasthenia Gravis who were hospitalized during this flu season at Lehigh Valley Health Network (LVHN).

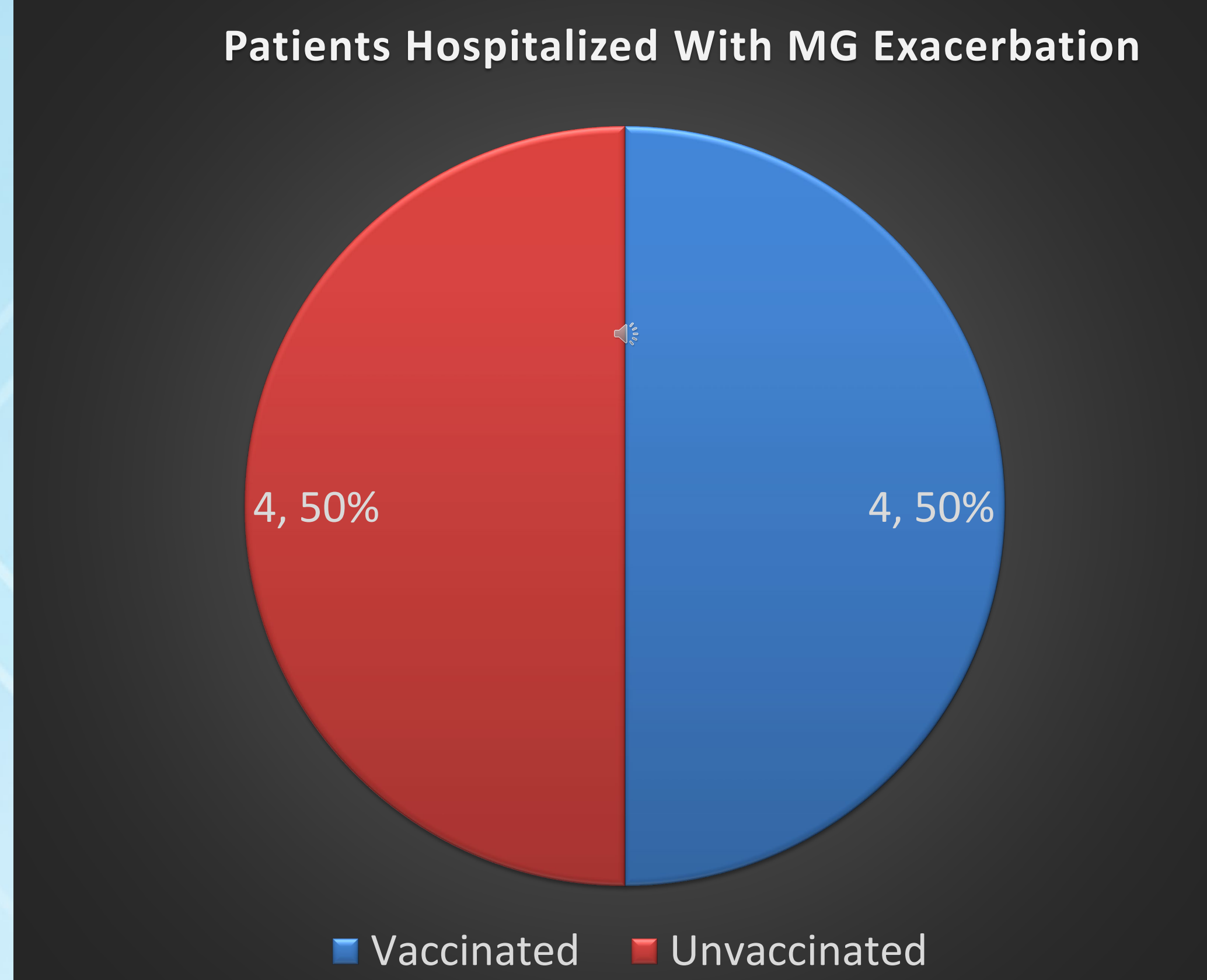
Methods



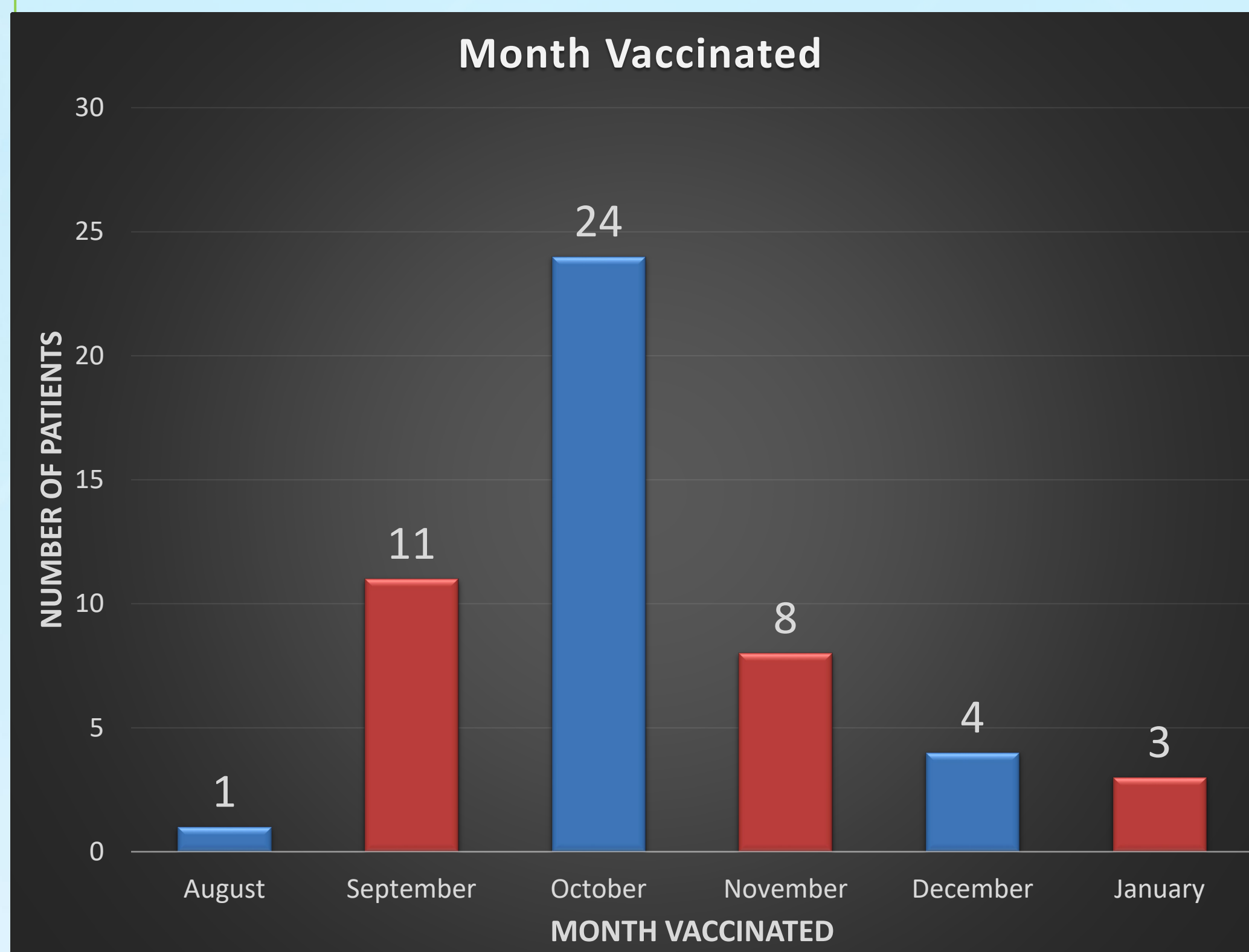
Results



Graph A. Vaccination status of patients seen in the hospital but without a Myasthenia Gravis Exacerbation



Graph B. Vaccination status of patients seen in the hospital with a Myasthenia Gravis exacerbation



Graph C. Month flu vaccination received.

Discussion

- We found that overall, of the 92 charts (one was removed because they had allergies to the flu shot) of patients with MG who had a hospital encounter between September and January, 54% were vaccinated.
 - This falls well below the CDC goal of 90%.
 - Patients with MG are both more susceptible to and more impacted by the flu, which can precipitate a life threatening myasthenic crisis.
 - This gap below the 90% goal also means that herd immunity has not been reached within this subgroup of patients.
 - Despite falling short of the 90% mark, the population sampled still remains well above the 45.3% vaccine coverage rates of the general population.
 - Possible reasons for this in the population sampled could be due to closer physician follow up than the general population.
 - It also may reflect local efforts at LVHN to increase vaccination rate, including free drive up flu drives.
 - However, the 36% gap in recommended vaccine coverage that remains demonstrates that there are further steps that need to be taken in order to better protect this vulnerable population.
 - The Fishers Exact Value was 1, higher than the 0.05 cutoff for significance, indicating that vaccination status was independent of whether the patient was hospitalized for an exacerbation of MG or not.
- SELECT
- This project exemplifies what results of a SELECT student's education in the health system domain.
 - In general, health systems are currently transitioning to a managed health approach, especially at LVHN.
 - A managed health approach to care works to maintain the health of a population, as well as provide targeted preventative care for at risk populations.
 - In this case, the vulnerable population is patients with Myasthenia Gravis and the specific intervention is improving vaccine coverage.
 - Managed health allows the hospital to decrease admissions, have more space available for patients in need, as well as saving money they may receive from insurance companies to manage a group of patients.
 - The patients benefit by preventing unnecessary illness and possible myasthenic crises.
 - They would also ideally benefit long term from decreased insurance costs if the overall population is able to decrease medical costs by not getting the flu.
 - This topic of health systems and managed care is especially important for a health care system to keep in mind as the medical landscape continues to change.

Conclusions

- The overall purpose of this study was to better understand current vaccination coverage of patients with MG, and to examine any link between vaccination status and hospitalization due to MG exacerbation.
- We found that though most patients with MG who were in this sample were vaccinated (55%), it still fell short of the 90% goal.
- This should continue to be a target of research and improvement because of the vulnerability of these patients to the influenza virus.
- In regard to a link between vaccination status, we found no difference in vaccination rates between those that had a myasthenic crisis and those who were hospitalized for a different reason.
- Future studies may attempt to increase vaccination rates in patients with Myasthenia Gravis.
- Possible efforts done in other systems include, paper fliers, mailed reminders, patient scheduled vaccinations and television ads.
- If the overall vaccination rate for patients with MG can be improved it may lead to a stronger herd immunity, less complications for the patients, and cost savings for the health system.

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Questions?