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Age Well: Home Health Care Shortages in Northwestern VT during the COVID-19 Pandemic

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Background

As of February 2021, there have been over 26.6 million cases and over 450,000 deaths in the United States due to COVID-19. Since the outbreak, a critical focus in the healthcare system has shifted towards protection of healthcare providers as well as vulnerable patients such as the elderly. The growing shortages of providers has resulted in a growing need for home health care (HHC)¹. Beyond HHC addressing this workforce gap, evidence has shown a reduction in emergency department (ED) visits, hospital admissions and a 14-million-dollar savings in healthcare cost². While the role of HHC has been crucial for the efficacy of the healthcare system, like many other sectors, the COVID-19 pandemic has resulted in unforeseen challenges. According to a 2020 survey conducted by Home Health Care News, 92% of HHC agencies have lost a substantial amount of revenues due to shortage of resources in addition to an increase in patient and caregiver anxiety³.

Objectives

Students at the Larner College of Medicine partnered with Age Well, a provider of care coordination services in Vermont, to address the following objectives:

The **primary objective** was to determine the proportion of Age Well clients that were subject to homecare staffing shortages throughout the 2020 calendar year.

Secondary objectives included comparing: 1) the average duration of an inpatient stay between home-health sufficient vs. home-health insufficient individuals, and 2) the proportion of presentations to the Emergency Department between individuals with and without homecare staffing.

Methods and Materials

A data set was compiled by Age Well through **Patient Ping**. Patient Ping is an automated software created to connect providers to their clients when they are outside the hours of direct care. Patients can be enrolled in this database through the Vermont hospital network, UVMMC, assisted/complete care living facilities, or other behavioral/post-care providers. “Pings” are generated and recorded in the database whenever a patient visits one of the associated facilities.

Information Included in Pings: Patient demographics, facility visited, visit duration, type of visit (*Outpatient, ED, Inpatient Admission, Transfer to Long-Term Care, COVID-related*)

Population: 560 patients enrolled in Age Well throughout the northwestern Vermont area

Total Patient Pings: There were 8,467 pings during the time frame of 01-Jan-2020 to 31-Dec-2020

Measures: By organizing the patients/patient pings through Excel spreadsheets, individuals were separated on the spreadsheet based on their status as “healthcare sufficient” and “healthcare insufficient”. After the patients were separated by status, the average duration of hospital stays (**time from hospital admission to discharge or transfer to long-term care**) were calculated for both groups. The average amount of ED visits for both groups were also calculated. A paired T-test was conducted to determine statistical significance.

Results

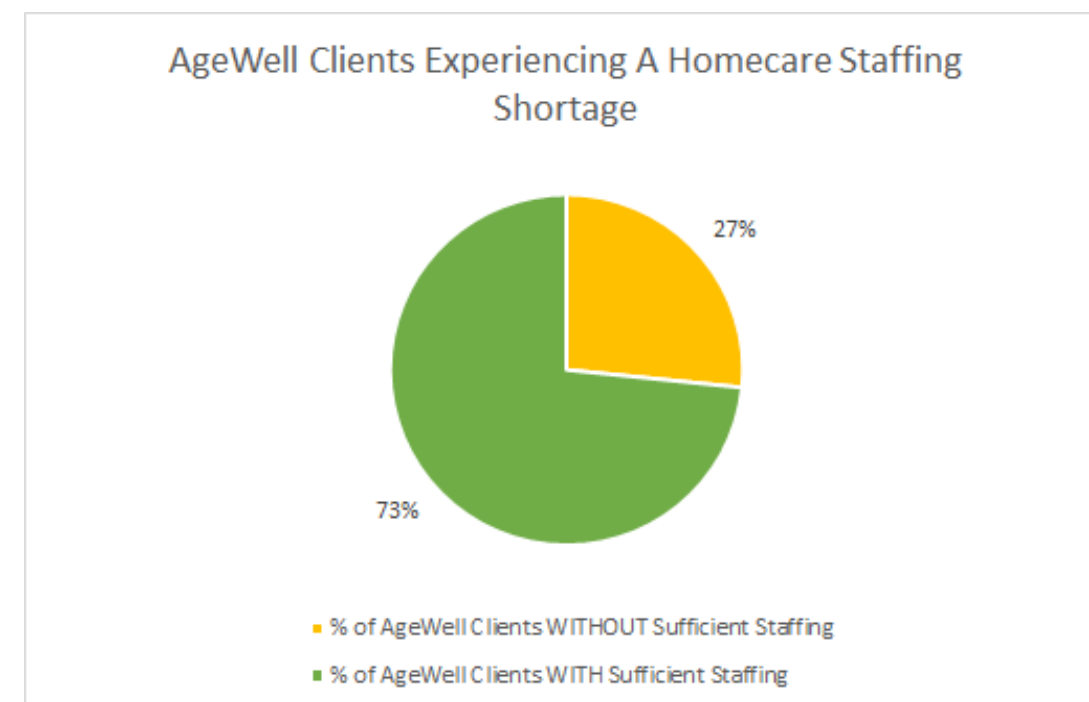


Figure 1. 73% of all Age Well clients were deemed homecare staffing sufficient, compared to 27% of Age Well clients who experienced a homecare staffing shortage.

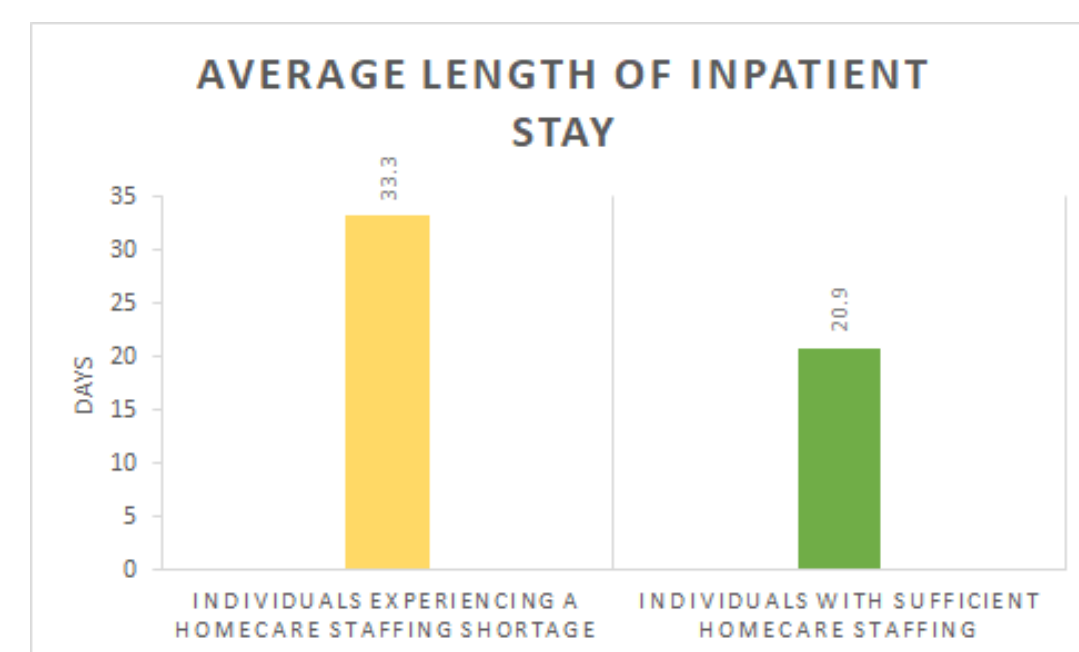


Figure 2. Clients who were homecare sufficient had an average inpatient stay of 20.9 days compared to homecare insufficient inpatient stays of 33.3 days, on average.

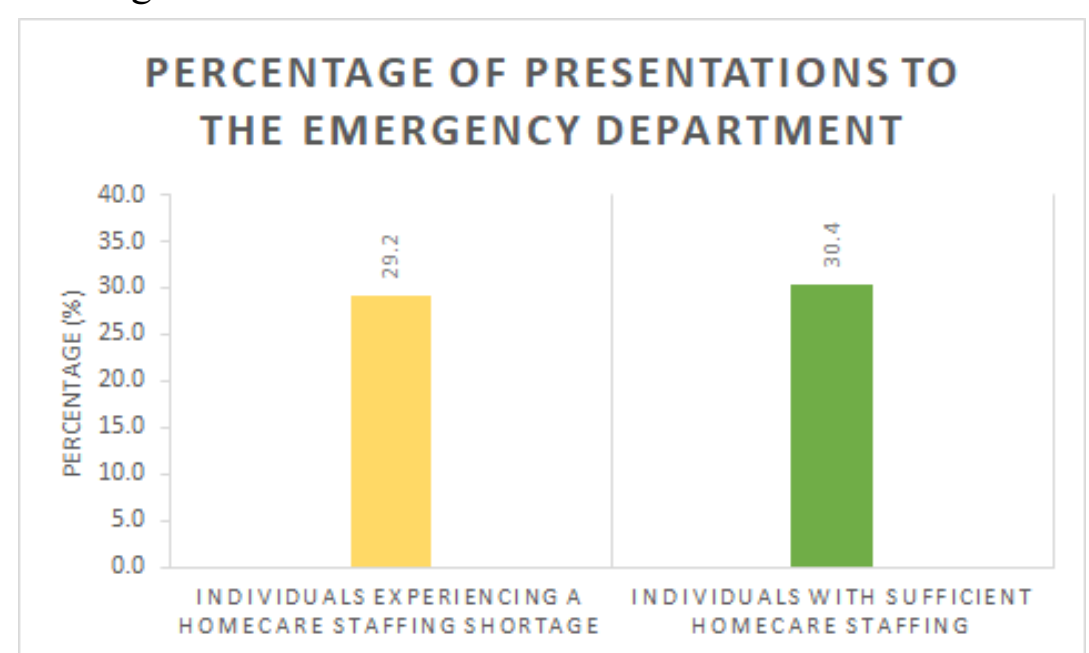


Figure 3. 29.2% of all pings in the homecare staffing shortage population were presentations to the emergency department, compared to 30.4% of all pings in the sufficient staffing population.

Discussion

- 1 in 4 Vermonters in the Greater Burlington area are experiencing the effects of a healthcare shortage from insufficient homecare staffing.
 - 31,300 elderly people in Vermont are at risk for being healthcare insufficient.
- The 2017 U.S. national average for a generic hospital admission per day is \$3,949.⁴
 - Homecare insufficient clients had an average hospital admission stay of 12.4 days longer than homecare sufficient clients. This indicates that clients with insufficient home healthcare will pay \$48,968 more than those with their needs being met.
 - Based on these findings, Vermont is spending an extra \$307 million per year on excessive hospital stays for patients with insufficient home healthcare.
 - To address this excessive spending, Vermont could increase the Choices For Care budget.
- 29.2% of healthcare insufficient patient pings were ED presentations in 2020, whereas 30.4% of individuals with sufficient staffing pings were ED presentations in 2020.

Limitations

- Data included only clients from the northwestern VT area and do not represent the population of the entire state.
- Due to the rural nature of Vermont, the population sampled may not be indicative of the socioeconomic limitations that currently exist.
- Data provided for this study were from 2020 and did not include pre-COVID numbers. Results found may not be representative of pre-existing shortages.

Future Directions

- Perform a state-wide analysis by comparing the northwestern VT Age Well data to all of Vermont's Patient Ping data.
- Complete an annual review of Age Well Patient Ping data for 2021 and beyond and compare it to 2020 to determine the effects of the COVID-19 Pandemic.
- Private home health agencies are not eligible for Patient Ping. Therefore, the goal is to develop a system for comparison of private- vs. public-funded patient services and outcomes.
- Inform the VT legislature House Committees on Health Care and on Human Services in addition to the Senate Finance and Senate Health and Welfare Committees of these findings and their implications on state spending. Future efforts should include involvement of the VT legislature to increase wages for LNA/PCA workers and placement of incentivization programs for private and public agencies to help close the gap in home healthcare caused by the COVID-19 pandemic.

Conclusions

- In 2020, there was a drastic shortage of healthcare workers. A New Hampshire study in 2020 showed an employment gap of 709 Licensed Nurse Assistants (LNA) and Personal Care Assistants (PCA) compared to previous years⁵. However, this finding may or may not be a result of the COVID-19 pandemic. These data indicate a need for further study and tracking of the HHC shortage.
- 2020 Patient Ping data from Age Well supported the findings above regarding HHC shortages.
 - 1 in 4 Vermonters in the northwestern VT area were healthcare insufficient.
- HHC shortages during the pandemic have played a role in further straining the health care system.
 - Hospital admission stays were 12.4 days longer in healthcare insufficient patients compared to healthcare sufficient patients. This costs VT Medicare an average of \$49,968 per home health insufficient patient hospital admission.
- Patients from both categories presented to the ED at similar rates. However, these data might not be representative of previous years due to COVID-19.
- These data provide the first quantitative study done for Vermonters who need home healthcare and the challenges that they face, as well as those faced by care providers. While it is quite likely that the COVID-19 pandemic exacerbated the current challenges, prior qualitative data indicate that these challenges have been recognized for some time and will continue. This indicates the need for not only additional quantitative studies, but also for immediate action to meet the recognized challenges.

References

- Cohen, Steven Dr. PH, MPH. A Review of Demographic and Infrastructural Factors and Potential Solutions to the Physician and Nursing Shortage Predicted to Impact the Growing US Elderly Population. *Journal of Public Health Management and Practice*. July 2009. Volume 15: Issue 4: p 352-362 doi: 10.1097/PHH.0b013e31819d817d.
- Barrett, Donna, Secic, Michelle et al. The Gatekeeper Program, Home Healthcare Nurse: *The Journal for the Home Care and Hospice Professional*. March 20210. Volume 28: Issue 3: p 191-197. doi: 10.1097/01.NHH.0000369772.41656.4e.
- Holly, Robert. HHCN Survey. *Home Health Care News*. June 2020. <https://homehealthcarenews.com/2020/06/hhcn-survey-92-of-home-health-agencies-have-lost-revenue-due-to-coronavirus/>
- Fay, B. (2021, February 26). *Hospital and Surgery Costs – Paying for Medical Treatment*. Debt.org. <https://www.debt.org/medical/hospital-surgery-costs/>.
- Rosenbluth, T. (2020, October 26). *Number of nursing assistants in state rapidly declining*. Concord Monitor. <https://www.concordmonitor.com/LNA-staffing-shortage-nursing-homes-36986765>.

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