COVID-19 Home Oxygen Remote Monitoring Program

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Care Management

Introduction/Purpose

Introduction

Stamford Health is a 305-bed community hospital located in lower Fairfield County, Connecticut. Stamford Health is in close proximity to New York City and many residents in lower Fairfield County commuted into the city for their job. Both factors contributed to the city of Stamford and Stamford Health becoming an epicenter for the first wave of the COVID-19 Pandemic in 2020.

Background

Early in March of 2020 CMS announced several waivers and one in particular relaxed many of the regulatory requirements and paperwork for home oxygen. As "in most patients who die of COVID-19, the initial illness advances insidiously, sometimes with "silent hypoxia"" showing "the importance of identifying hypoxia early" while "managing the complication promptly and actively" , Stamford Health saw this as an opportunity to create a COVID-19 Home Oxygen Program lead by a Nurse Navigator, (Greenhalgh, T., et al, 2021). A framework was formed with key hospital leadership as well as the Chair of the Department of Medicine to provide structure and oversight of the process. Pulse oximeters were in high demand, and it was identified early on that the hospital would need to purchase pulse oximeters and provide them to patients who were part of the program.

Project Summary & Methods

Methods and Strategies

- Gather data on CMS regulatory changes for eligibility requirements for home oxygen
- Obtain buy-in from key hospital leaders
- Perform a gap analysis on the format of the program
- Identify a vendor as a partner
- Collaborate with the Chair of the Department of Medicine to oversee the program and provide the criteria for enrollment to and discharge from the program
- Educate providers and staff hospital wide
- Provide feedback to providers on patient progress
- Address internal and external program challenges such as the need to expand a separate Pulse Oximetry only branch of the program
- Establish a dedicated call line for the Nurse Navigator of the COVID-19 Home Oxygen Program
- Monitor milestones to achieve Discharge Criteria

COVID-19 Home Oxygen Process

COVID-19 Positive Patient Enrollment Selection

- Stable requirement of ≤ 6LPM for ≥ 48 hours
- At a high risk for clinical deterioration at home
- Limited comorbidities (non-smoker, no history of significant pulmonary disease)
- Good functional status (cognitively intact, ambulatory)

Nurse Navigator Referral

- Received through COVID-19 Home Oxygen Program Hotline
- Evaluates appropriateness of program enrollment ensuring patient meets criteria including an active relationship with a community PCP agreeable to collaborating with the program team
- Confirms patient access to a home pulse oximeter and an understanding of oxygen regulation as well as importance of follow up care

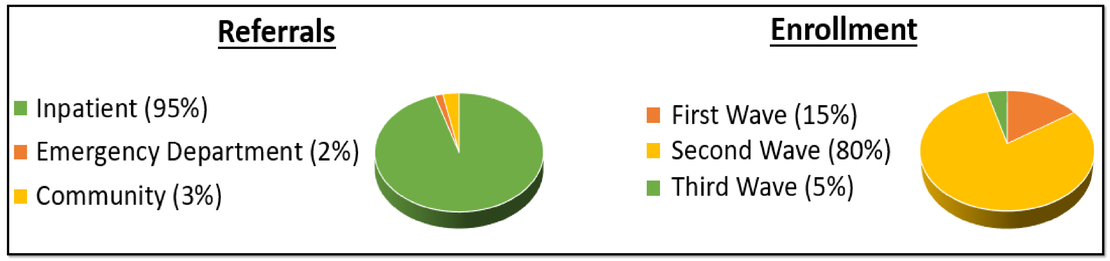
Program Process

- Daily phone calls Monday through Friday 8am to 4pm EST
- Reviewed PO2 goals, encourage incentive spirometers and proning
- Provided updates to the PCP, collaborated a plan for weaning, and address concerns based upon clinical judgment

Patient Discharge Criteria

- Symptoms improved and stable for at least 24 hours with oxygen saturation being ≥ 94% at rest and ≥ 90% during ADLs without significant dyspnea without supplemental oxygen or to chronic oxygen baseline
- Remain stable on ≤ 2LPM for ≥ 30 days and have been able to wean to room air or chronic baseline oxygen
- Noncompliance

Data/Results

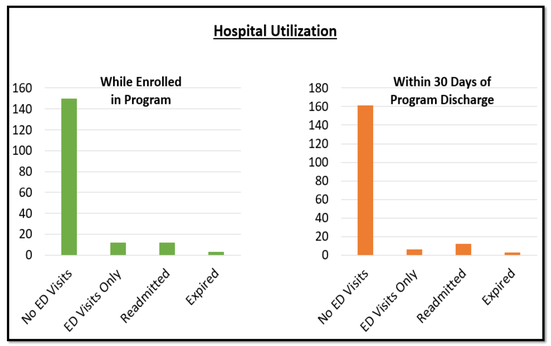


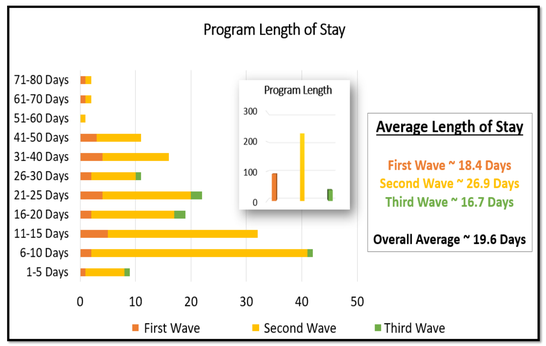
Number of patients that went through the program : **168**

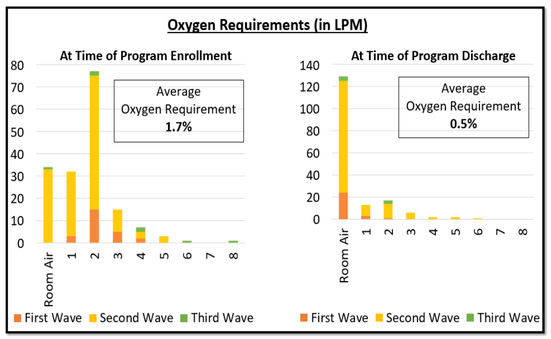
Average age in years of program participant : **65**
Range of ages being 23 to 96 years
50% being between 60 and 79 years of age

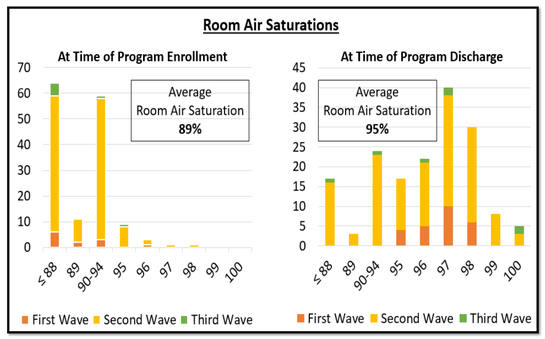
Number of patients at the program's highest daily enrollment census : **21**
(High Census occurred on 12/12/2020 – 12/15/2020 and 1/27/2021)

Shortest Length of Stay on Program: **1 day**
Longest Length of Stay on Program: **73 days**









Implications

- Reduced utilization of the Emergency Department, Immediate Care Center, and PCP appointments by facilitating a successful recovery at home
- Provided a human component lacking during an emotional and isolative time
- Fueled collaboration and strengthened relationships
- Secondary benefit to patients as other concerns were addressed such as fatigue, appetite, and anxiety as well as other newly reported ailments were addressed in real time with the Nurse Navigators aiding to bridge gaps between patient and PCP

Conclusions/Outcomes

Outcomes

Improvement

- Discharged upon achievement of milestones
- 80% improved while enrolled

Noncompliance

- Patients and PCP who did not maintain contact with program or participate in ongoing management

Long-haulers

- At times signing over further follow-up to pulmonary or primary care for long-haulers
- 40 participants discharged from the program with a continued need for oxygen
  - 1st wave – 4
  - 2nd wave – 32
  - 3rd wave – 4

Readmissions

- 12 Readmissions while enrolled
  - 1 Readmission resulting in lung transplant
- 12 Readmissions within 30 days of discharge from the program

Deaths

- 1 Death while enrolled
- 3 Deaths within the first 30 days of discharge from the program
  - 2 Deaths occurred upon the patients transitioning from the program to home hospice

Conclusion

- The Covid 19 pandemic and subsequent surge in Stamford caused a change in practice for Case Management. Quickly developing a Covid Home O2 program required research, teamwork and resources. The outcomes for these patients proved that the interventions were effective in keeping patients in their home with self monitoring and additional Case Management support. It proved to be an effective method for providing an alternative to admission and continued hospitalization for these patients and at the same time assisted in increasing the capacity of the hospital.
- "Guidance published in January 2021 by the World Health Organization includes a provisional recommendation for "use of pulse oximetry monitoring at home as part of a package of care, including patient and provider education and appropriate follow-up", (Greenhalgh, T., et al, 2021)

References & Acknowledgements

References

Acknowledgements