

Abstract

This clerkship was designed with the intention of bringing awareness to the public in the town of Carlisle, Massachusetts about fire dangers associated with being on long term oxygen therapy. More than 1,200 Americans aged 65 and older die each year as a result of fire. One fifth of these individuals are bedridden or challenged by some other physical disability such as the need for oxygen therapy (American Burn Association). Home oxygen therapy uses concentrated oxygen and is, therefore, a fire hazard. It will cause a flame and fire to spread rapidly if it comes into contact with an ignition source creating a hazardous environment for residents, visitors, service providers, and fire fighters. As of 2010, Carlisle has a population of 4,852, with an estimated 244 smokers (Massachusetts Department of Public Health, 2013). The senior population is growing by approximately 5% annually, and it is expected that within 5 years the population of seniors in the town will be about 30% (Town of Carlisle Council of Aging, 2009). By taking proactive steps to educate the public in Carlisle on this issue, the group hopes that we are promoting a safe and secure community for all.

Background

Normal room air is 21% oxygen. However, the gas in an O₂ tank is 100% pure oxygen. As gas escapes from the tank it increases the percent oxygen in a room. When the percent oxygen in a room is higher, fires start easier and burn faster and hotter. The most common trigger of oxygen related fires are cigarettes. Seniors today are at greater risk of being victims of these fires as they comprise the majority of the population using home oxygen. In addition, due to their dearth of mobility and or loss of cognitive function, seniors may not be as safe around home oxygen as compared to other adults. Therefore, it is of paramount importance to educate seniors on the dangers of smoking near their home oxygen supplies.

Methods

A multi pronged approach was necessary to not only initiate a program, but to ensure long term effects. This was made possible by our interprofessional network. The public health officer of Carlisle was consulted about the town's current knowledge of oxygen fire safety. Next, members of the town cable channel were contacted to set up a TV interview to introduce ourselves to the town. In addition, we conducted a newspaper interview in the Carlisle Mosquito so that those without cable access could be educated on oxygen safety. We reached out to the town's website manager to set up a comprehensive oxygen therapy website. This site included information from oxygen safety, to smoking cessation. A comprehensive pamphlet was also made to hand out at community events. Finally, in an effort to create a long term program in the town we met with Carlisle's fire chief to give him the resources we had made and discuss the future of this program.

Actions

WEBSITE: We compiled a list of appropriate resources from FEMA, American Lung Association, American Red Cross, National Fire Academy, American Burn Association, and the Census of Massachusetts (Department of Public Health) and displayed these on a web page. This web page will be linked to the Carlisle Board of Health and Carlisle Fire Department website.



BROCHURE: We also created a brochure with basic information about fire safety in relation to oxygen use. The brochure lists information about preventing oxygen based fires and what to do in case of an emergency.

CCTV Program: Our group participated in a panel discussion on the monthly program produced by the Council on Aging to introduce our topic and explain why this topic is relevant to our target audience (seniors).

NEWSPAPER ARTICLE: We spoke to the Carlisle Mosquito newspaper, a town newspaper delivered to everyone in the town free of cost.



Evaluating Effectiveness

- We hope to increase the amount of traffic on the Carlisle health website by 10% and by doing so, increase the awareness of important health topics such as oxygen safety.
- Currently Carlisle has no reported injuries due to oxygen misuse. As they open a new senior center, we hope to keep this number at zero.

Conclusion

A major lesson learned from this project was that there are numerous household items that pose a threat to oxygen users. A functional website on oxygen safety was added to the existing town website to address this issue. Various forms of media and resources were used to reach out into the community to bring awareness to oxygen safety.



This is an image of a structure fire that occurred at the Plymouth Senior housing on August 4, 2006. This fire started as result of a resident smoking while on home oxygen therapy.

A total of \$500K in damages was reported with 15 residents displaced. The center took a year to rebuild.

Future Directions

- Provide resources to the local fire department to facilitate in long term education of the seniors of Carlisle.
- Create a oxygen safety workshop to present at the Annual Public Fire and Life Safety Education Conference presented by the Massachusetts Department of Fire Services
- Keep all resources current with up to date information as to promote fire safety.

Acknowledgments

We would like to thank the following:

- Linda Fantasia and the multiple agencies of Carlisle, MA
- Ed Fields (IT Director for the town of Carlisle, MA)
- Dr. Kimberly Robinson of Marlborough Hospital
- Bouvier Pharmacy
- Mary Philbin of Umass Medical School

References

American Burn Association. *Fire and burn safety for older adults educators guide*. Retrieved from <http://www.ameriburn.org/Prevent/BurnSafetyOlderAdultsEducatorsGuide.pdf>
Massachusetts Department of Public Health (2013). *Community fact sheet Carlisle, Massachusetts*. Retrieved from <http://makesmokinghistory.org/>
United States Census (2010). *Middlesex county [Data file]*. Retrieved from <http://www.sec.state.ma.us/census/middlesex.htm>
Town of Carlisle Counsel on Aging (2009). Town needs survey: senior population.