Changing Outbreaks in Long Term Care from Crisis to Control

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Abstract

Despite implementing standard infection prevention measures, our long-term care facility faced catastrophic outbreaks in units with cognitively impaired residents, where such interventions proved either ineffective or impractical due to staffing and resident-related challenges.

Objectives

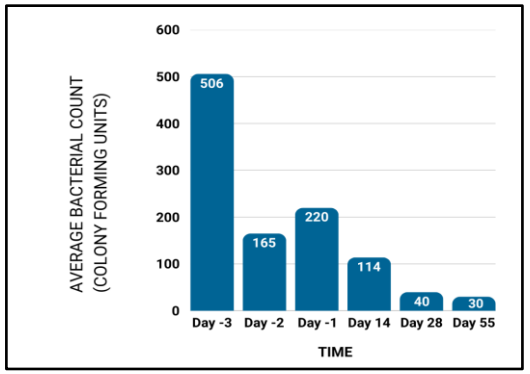
- Mitigate Outbreaks
- Implement a prevention strategy that does not rely on staffing
- Mitigate infections while optimizing physical interaction.

Study Design

Confronted with constraints related to staff, residents, and resources common in long-term care facilities, we explored options for adjunctive measures to address these challenges, ultimately implementing dry hydrogen peroxide (DHP) technology in these specialized areas. DHP was chosen as it was automated, able to be used in occupied spaces, and required no physical remodeling of the facility.

Results

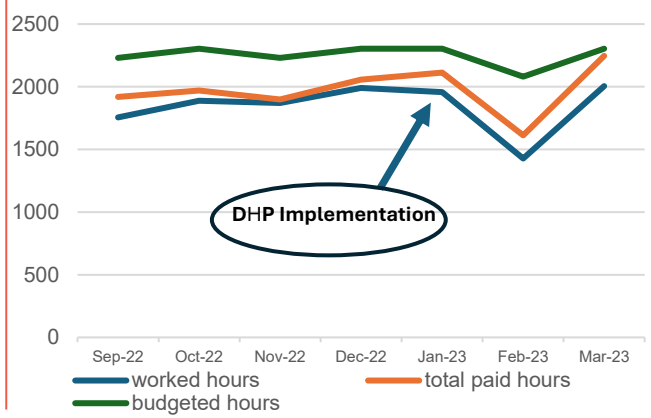
Effects of DHP in the Neurobehavioral Unit



Neurobehavioral Unit Outbreak Comparisons

December 2020 No DHP	December 2022 With DHP
100% attack rate	40% attack rate
40% death rate	No deaths
Overwhelming speed of outbreak	Slowly evolving 2 cases at a time
All residents with acute medial issues	No new cases after 7 days

No increase in Environmental Services



A Head-to-Head Comparison DHP versus no DHP

Descriptive Epidemiology of Units

Event #	Unit	DHP Deployment	COVID Exposure	Duration of Event	Attack Rate
1	A-Unit	No	5/31	32 days	66.67%
1	Memory Lane	Yes	5/31	NA	0
2	E-Unit	Yes	6/3	11 days	13.33%

DHP = Dry Hydrogen Peroxide

* Duration of event defined as 10 d from the last positive COVID test

Outcomes and Lessons Learned

Implementation of DHP resulted in drastic reductions in:

- Microbial burden
- Total number of outbreaks
- Outbreak attack rates
- Outbreak severity
- Outbreak duration

Resident quality of life was optimized without placing additional strain on staff.

Through this process, we learned that infection prevention interventions tailored to the characteristics of the population and facility yield maximum effectiveness.

More Information

https://www.ajicjournal.org/article/S0196-6553(25)00053-7/fulltext

https://www.ajicjournal.org/article/S0196-6553(23)00405-4/pdf

Infection control without adding staff — it's not just a fluke - Guest columns - McKnight's Long-Term Care News (mcknights.com)

https://www.mcknights.com/blogs/guest-columns/putting-infection-control-to-the-test/

https://www.mcknights.com/blogs/guest-columns/prioritizing-people-infection-prevention-that-preserves-resident-quality-of-life/