



## Equipment Requirements

(2) HALO HEPA Air Purification Systems

## Products Expectations

- Reduce the risk of viral airborne transmission
- Mitigate exposure to mold, fungi, and bacteria
- Increase residents' quality of life with healthier air
- Provide a cleaner environment equivalent to an ISO 8 cleanroom
- Create an environment of comfort for staff knowing the air they breathe is being treated.

# CASE STUDY

## Avamere Transitional Care & Rehabilitation



### Project Background

This proficient nursing community is nestled in the bustling city of Boise, Idaho. Their services include: skilled nursing, rehabilitation, long-term care, and respite care. United in their mission to enhance the life of every person they serve, staff at Avamere Transitional Care and Rehabilitation are primed to meet their patients' needs with a 5-star staffing rating from Medicare. The American Health Care Association also recognized Avamere Transitional Care and Rehab, Boise, for quality care as part of the Quality Initiative Recognition Program.

Like the majority of elderly service facilities trusted with keeping their residents safe and healthy, COVID-19 was a shared concern for those tasked with nurturing the lives at Avamere transitional care and rehabilitation. The need for a retrospective review of installed HVAC as it pertained to air quality in the facility was the first step. The next step was to seek out a partner who could provide the level of filtration needed, a plan, and the ability to test the efficacy of whatever unit was installed.

As related by their administrator, Joshua Smith, NHA, RCA, Avamere - Boise, management, was very interested in researching the capabilities of superior air purification solutions that would be robust enough to increase the resident's quality of life. Mr. Smith needed an action plan immediately due to negative developments from the accompanying affects of COVID-19, such as depression occurring among patients that have to be moved



to isolation rooms, as well as air contaminated with small particulate matter that was aggravating residents with pulmonary issues. Staff and maintenance crews also needed to feel like they could safely conduct their work with confidence that they were also protected.

## Finding a quality, reliable solution to advance healthcare

When interviewed, Mr. Smith shared that he discovered Erlab through the recommendation of a colleague and was further convinced to call because of Erlab's sound reputation as an industry leader in air purification with over 50 years of experience in the industry. What they hoped to realize from the purchase of the Erlab Halo P air filtration station was an increase in air quality that would result in increased quality care along with decreased cost for staffing and PPE usage. As price is always a consideration among managers of long term care and skilled nursing facilities, Mr. Smith understood that the initial cost would be higher but that when one looked at the long term, bigger picture they would realize cost savings in their ability to control further spread of new disease cases in the facility among residents and staff.

## Experimenting to verify efficacy

The Avamere organization is similar to thousands of elderly care facilities across the country who are urgently looking for direction and assistance to quell the rising tide of COVID-19 devastation, and it's mutated forms, among their population. For them, it was extremely important to find a way to reduce the disease process of not just COVID-19, but all easily spread flus, viruses, and bacteria, as well as indoor pollution (PM2.5) that sickens already compromised residents affecting their quality of life and their lifetime.

To remedy these issues, they enlisted Erlab to install Halo air filtration stations in two resident's rooms for the purpose of scientific testing and comparison. A reputable industrial hygiene resources company was hired to setup the test with consideration of evidence gathered by dust sampling, particulate sampling, and surface sampling for COVID-19. The goal was to measure airborne transmission amounts of contamination in the test rooms. It is important to note that the Avamere facility previously employed only MERV 13 filters in their HVAC units. A control room was setup with a COVID positive resident near the end of their quarantine with a hallway door being open, and another room with a COVID positive resident where the data showed that the resident was actively shedding the virus, also with the door open. It should be noted that part of the criteria for installing a Halo air purification station was the hope that resident doors could stay open to negate the feeling of isolation from quarantine, without the risk of COVID spreading into the adjoining hallway and rooms. No Halo or other air cleaning unit was installed in the first test room however, a Halo HEPA unit was installed in the second room on the ceiling, between the resident bed and the return air register.

Dust Analysis	Test room 1 No Halo average	Test room 2 Halo Installed average	Contaminant Source
Spore total count	213	258	Outside air
Pollen	13	13	Outside air
Mineral/clay	2265	1875	Outside
Skin cells	1967	1785	Inside room

Looking at the air particulate sampling test results from the dust analysis, the trend shows a general reduction in skin cells, synthetic fibers, opaque particles, and minerals clays, which demonstrated that circulating air levels of room generated contaminants were lower in the second room which contained the Halo HEPA unit. Though these particles are generally heavier, and typically greater than 10 micrometers, the sampling of these particles do not truly represent the Halo performance as they don't stay in the

air stream for long, influenced by gravity's pull and settling to the ground and surfaces very quickly. A review of particulates as it concerns PM1-10 (Fine Particulate Matter) levels showed that circulating air levels, of all particulate sizes measured, were lower in the second room where the Halo HEPA unit was installed. Keeping in mind the fact that PM 2.5 refers to particulate matter 100 times thinner than a human hair which can be captured by the Halo, this is an impressive result.

Test results from a swab sampling for SARS CoV-2 on surfaces registered positive on the return vents in the room where

Units in ug/m <sup>3</sup> Particulates	Average Test Room 1 over 30 hours	Average Test Room 2 w/Halo over 30 hours
PM1	5.0	0.0
PM2.5	5.0	0.0
PM4 (respirable)	5.0	0.0
PM10	6.0	1.0

the resident was considered on the mend from COVID 19, which indicated that airborne COVID RNA was still circulating and present within the air stream. In room two with the active COVID 19 resident, high viral levels were detected on the floor and window shelf due to expected viral shedding, which also increases the viral load in the air. However, where one might expect to find high COVID results in the air stream and on the return register, the Halo proved that it reduced concentration

load factors to a non-detectable amount of COVID RNA on the return register.

The Halo air purification station has now been tested by 3- third party testing facilities, all with positive results on the system's ability to perform as stated. That being said, we are appreciative when customers like Mr. Josh Smith, administrator of Avamere Transitional Care and Rehab, support our claims that Halo is the most effective commercial air purification station on the market for improving indoor air quality by removing viruses, bacteria, and environmental pollution (PM 2.5).

We are also gratified to share Mr. Smith's recommendation, in his own words: *"Everyone was very easy to work with, had excellent follow through, and always met scheduled time lines, with timely communication and great results... We would love to purchase additional units."*

Covid Surface/Air Sample Results Location in Room ND = non-detect	N1, N2 proteins	Result	# RNA copies
Rm. 1- supply air register	ND	ND	--
Rm. 1- return air register	Positive	Positive	3,500
Rm. 1- floor by bed (results after sanitizing)	ND	ND	--
Rm. 1- window shelf (results after sanitizing)	ND	ND	--
Rm. 2- supply air register Halo installed	ND	ND	--
Rm. 2- return air register Halo installed	ND	ND	--
Rm. 2- floor by bed (results before sanitizing)	Positive	Positive	23,000
Rm. 2- window shelf (results before sanitizing)	Positive	Positive	820



Avamere Care and Rehab - 2023 ErLab USA - Technical data are not contractual. ErLab reserves the right to modify the present document without prior notice