

Ambulance Transportation Vehicles

Currently in the US, both employee and patient safety are key issues in medical systems, extending beyond the walls of medical facilities to ambulances. In a limited space, employees perform patient care, often under extreme time pressure, within a small vehicle moving at high speed. In ambulances, both employees and patients can be exposed to potentially infectious agents during transport in the vehicle, with a higher risk of healthcare-associated infections (HAIs), from the enclosed space of an ambulance. While risks of emergency medical service (EMS) workers is well-documented, data about patient risk in ambulances is not available. Therefore, adoption of methods to improve occupational safety for the EMS workforce, while ensuring patient safety, is urgent.

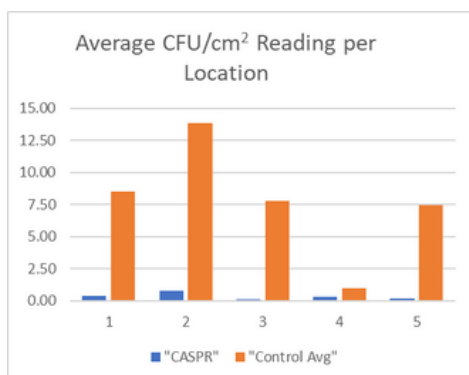
Purpose

This study evaluates the efficacy of CASPR's Natural Catalytic Conversion (NC²I) technology in an ambulance, compared to control ambulances without CASPR.

CASPR Technology

CASPR stands for "continuous air and surface pathogen reduction" and is a low maintenance natural catalytic converter that generates powerful oxidizers, including gaseous hydrogen peroxide (H₂O₂) from molecular oxygen and humidity of the ambient air and disburses low concentrations of oxidizers into the environment. The oxidizing molecules decompose pathogens in the air and on surfaces. The concentrations of those oxidizers are highly effective in reducing the bioburden, while safe for environments occupied by people and equipment of all kinds. CASPR is a novel technology for reducing bioburden in the air and on environmental surfaces.

RESULTS



Swab Locations:

1. Stretcher bench right
2. Left table surface
3. Door handle side
4. Top of center seat
5. Cabinet behind the seat

The CASPR Test unit had 95.46% less CFU than the average of the two control units. The above chart shows the comparison of the average of each swab location across the four weeks of testing. These data points are related in CFU/cm².



CASPR Transit Units

Specifically designed for transportation vehicles where pathogens are high.

BENEFITS:

- ▶ Proven effective against viruses (including COVID-19), bacteria and mold
- ▶ Effective against odors
- ▶ Easy installation
- ▶ Low maintenance
- ▶ Safe, discreet and silent

APPLICATIONS:

- ▶ emergency transportation natural air disinfection system
- ▶ Discreet- can be concealed on the ceiling or wall
- ▶ Available in both DC and AC adaptors
- ▶ Covers 50 to 200 square feet



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Claro published an article in the American Journal of Infection Control that identified the threshold for a safe medical environment that reduces HAIs is equal to or below 2.5 CFU/cm². The average for all locations on the CASPR test unit was 0.35 CFU/cm², which is 86% below the threshold. This study validates prior testing of the effectiveness of use of CASPR to reduce bioburden on environmental surfaces in the ambulance tested. The average for all locations on the two control units was 7.72 CFU/cm², which is 209% above the threshold.

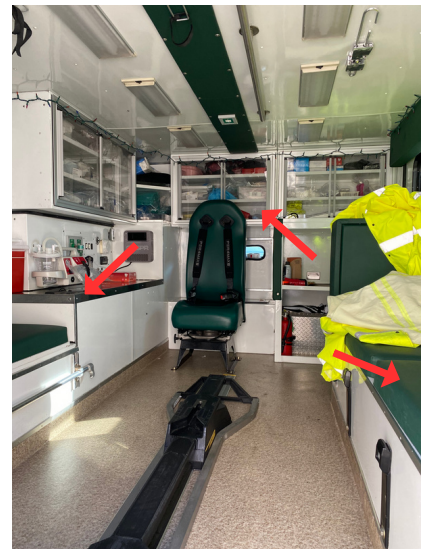
Data from test samples is provided for reference in Table 1 below. Data shown are the average CFU/cm² for each location during the four-week testing period. The results for the control units are reported as the average of each location across both control units and the four weeks.

Table 1 - Average CFU/cm² by location

Testing Location	CASPR	Control
Stretcher Bench Right	0.40	8.55
Left Table	0.80	13.86
Door Handle Side	0.10	7.79
Top of Center Seat	0.30	0.95
Cabinet behind Seat	0.15	7.43

CONCLUSION

This study, comparing samples collected from surfaces in an ambulance with CASPR Transit and pooled samples from similar control ambulances, concluded 95% less in bacterial load as measured with CFU/cm². This study confirms prior testing of CASPR technology as a proven effective method for disinfection, inactivating viruses, fungi, and bacteria, in laboratory testing. Based on these results, and an awareness of the occupational risks for EMS workers, we believe that implementation of CASPR Transits across the entire fleet of



ambulances would provide a safer environment for both employees and patients transported to and from medical facilities.