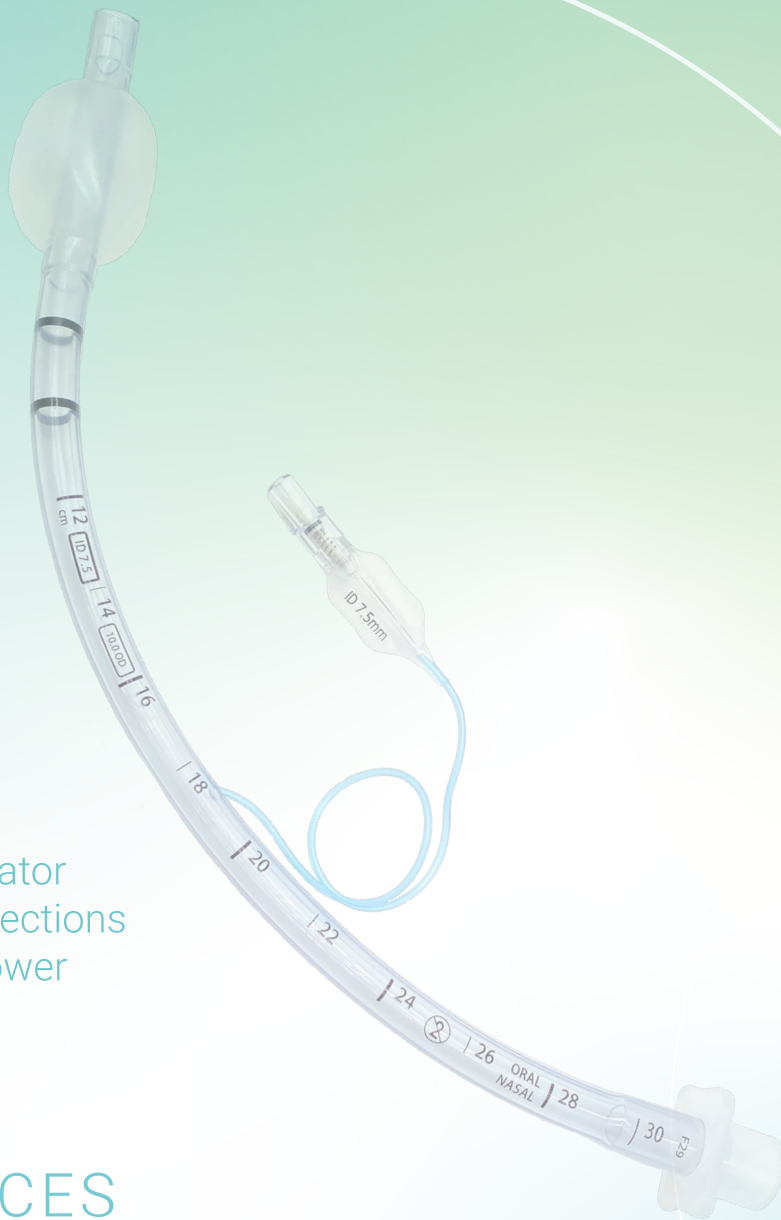


NEXT STANDARD OF CARE IN HAI PREVENTION

CeraShield™

BIOFILM-RESISTANT ENDOTRACHEAL TUBE



Designed to reduce ventilator associated respiratory infections (VARI) and significantly lower overall cost of care

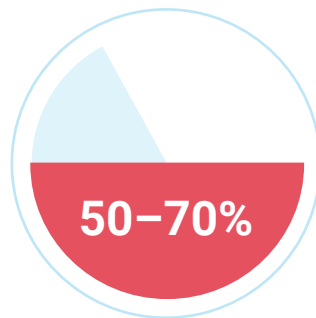
N⁸ BIOSCIENCES

MEDICAL DEVICE-ASSOCIATED BIOFILMS POSE A SERIOUS THREAT TO HUMAN HEALTH, AND LEAD TO NOSOCOMIAL INFECTIONS

New strategies are urgently needed

Up to 80% of microbial infections in the human body involve biofilm formation, especially in hospital settings, which greatly promotes incidence and mortality.

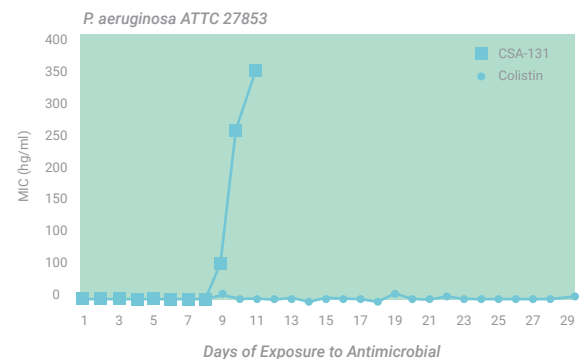
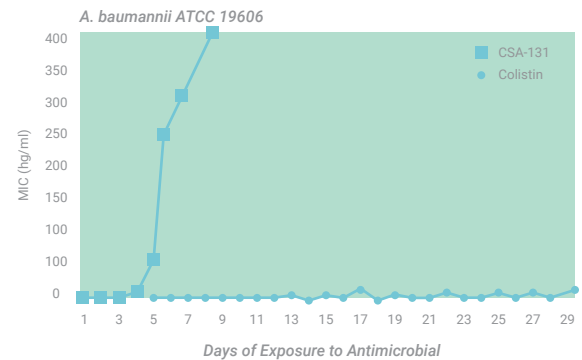
Over 6 million nosocomial infections worldwide each year



50–70% of nosocomial infections are related to indwelling medical devices.

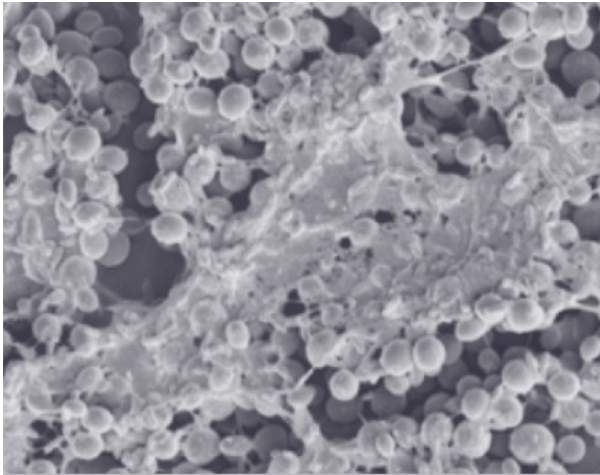
- Ordinary medical devices allow millions of pathogenic CFUs to grow on medical devices within hours and act as a reservoir of infectious agents leading to inflammation and infection.
- The resistance of bacteria in biofilms to antibiotics can be **10–10,000X** that of the corresponding planktonic cells.
- The rates of horizontal plasmid transfer were **several orders of magnitude higher** in the biofilms than in liquid cultures of the same organisms.

Resistance generation to colistin

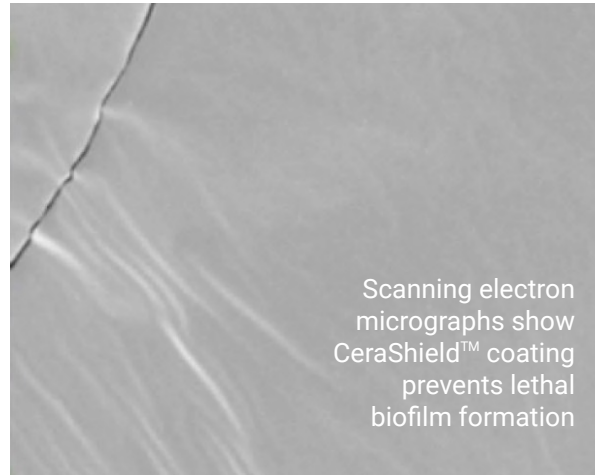


CeraShield™ biofilm-resistant coating works to prevent infection and inflammation

Ordinary ETT

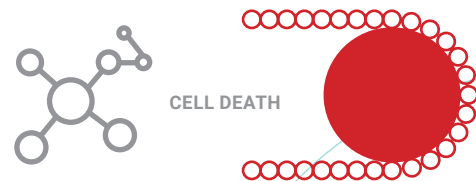
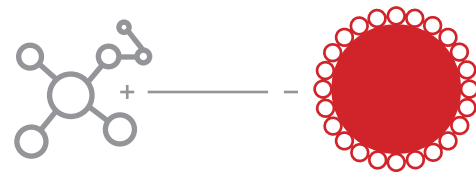


CeraShield™ Biofilm-Resistant ETT



CeraShield™ coating mimics the activity of the human body's innate immune system, which does not induce antimicrobial resistance (AMR).

- ① Creates hydration layer that inhibits bacterial adhesion to the surface, creating a "moat" around the device.
- ② The CeraShield™ Coating's net positive charge attracts the negatively-charged membranes of certain viruses, fungi, and bacteria.
- ③ As the CeraShield™ Coating and pathogen get closer together, the CeraShield™ Coating begins to permeabilize and depolarize the cell membrane, **leading to rapid cell death.**



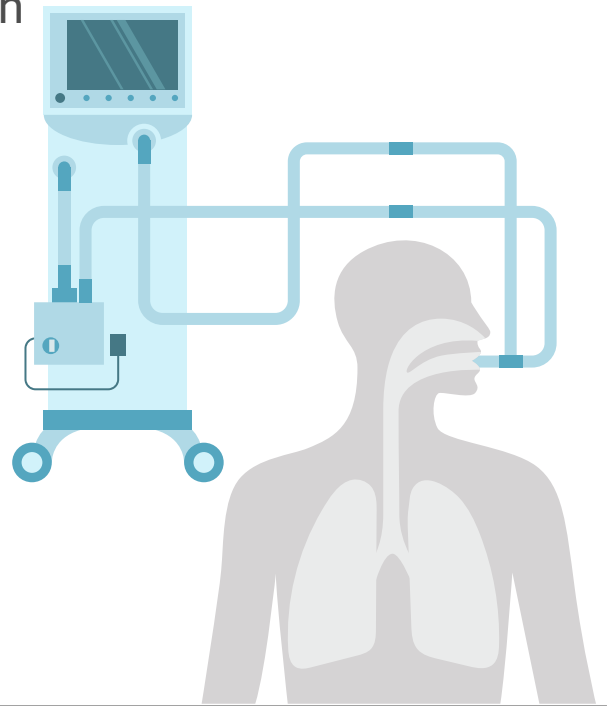
VENTILATOR-ASSOCIATED PNEUMONIA: WHAT IS THE REAL COST?

Each added case of ventilator respiratory infection adds between \$10,000–\$45,000 (US).

The total preventable cost worldwide is >\$10 billion.

9–13%

attributable risk of **death**



Approximately 50% **of all critical care antibiotics** are for treatment for VAP²

up to
25
days

prolonged **ICU** stay¹

up to
22
days

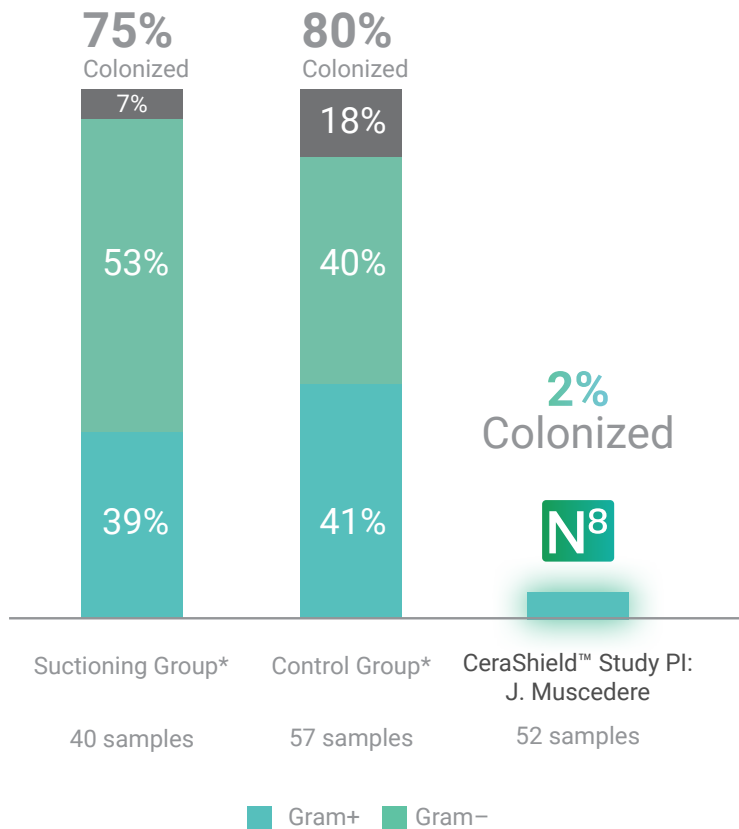
prolonged **hospital** stay³

INTRODUCING THE PROPRIETARY CERASHIELD™ COATED BACTERIA--RESISTANT ENDOTRACHEAL TUBE

By preventing biofilm, we can significantly prevent VAP and other adverse outcomes.



Comparison of Endotracheal Tube Aspirates



Girou, E., Buu-Hoi, A., Stephen, F. et al. Airway colonization in long-term mechanically ventilated patients. Intensive Care Med 30, 225-233 (2004). <https://doi.org/10.1007/s00134-003-2077-4>

The CeraShield™ ETT is approved for marketing in Canada and Belize with other approvals pending. The CeraShield™ ETT is an investigational device in the United States

ENDOTRACHEAL TUBE SIZE	N8 PRODUCT CODE
7.0 mm	18170
7.5 mm	18175
8.0 mm	18180
8.5 mm	18185

INDICATION

The CeraShield™ endotracheal tube to be used for airway management in adult patients expected to be intubated ≥ 24 hours.

The CeraShield™ ETT consists of:

- A standard adult cuffed ETT manufactured and sourced from Flexicare offered in sizes 7.0mm – 8.5mm.
- A hydrophilic anti-fouling coating on the inner and outer lumens, and the inflatable cuff.