AVANOS | CLOSED SUCTION SYSTEMS With BALLARD* Technology

MANIPULATION OF THE VENTILATOR CIRCUIT CAN INCREASE CROSS-CONTAMINATION – A LEADING CAUSE OF VAP[1]

- Ventilator-associated pneumonia (VAP) is the most common and deadly healthcare-associated infection, affecting up to 28% of ventilated patients.[2] To help protect patients, a closed ventilator circuit is recognised as a best practice in the prevention of VAP[3]
- Maintaining a closed ventilator circuit is recommended by the American Association for Respiratory Care (AARC)[3]
- A closed circuit maintains ventilation and oxygen therapy throughout suctioning, and prevents approximately 50% of the lung volume fall observed when suctioning after disconnection from the ventilator[4]
- Closed suctioning is a best practice that protects patients and caregivers[3,5]
  - Reduces the risk for contamination from outside pathogens[5]
  - Reduces colonisation within the circuit[5]
  - Designed to protect caregivers from exposure to body fluids

ADVANCED INFECTION CONTROL THAT SETS A NEW STANDARD IN CLEAN

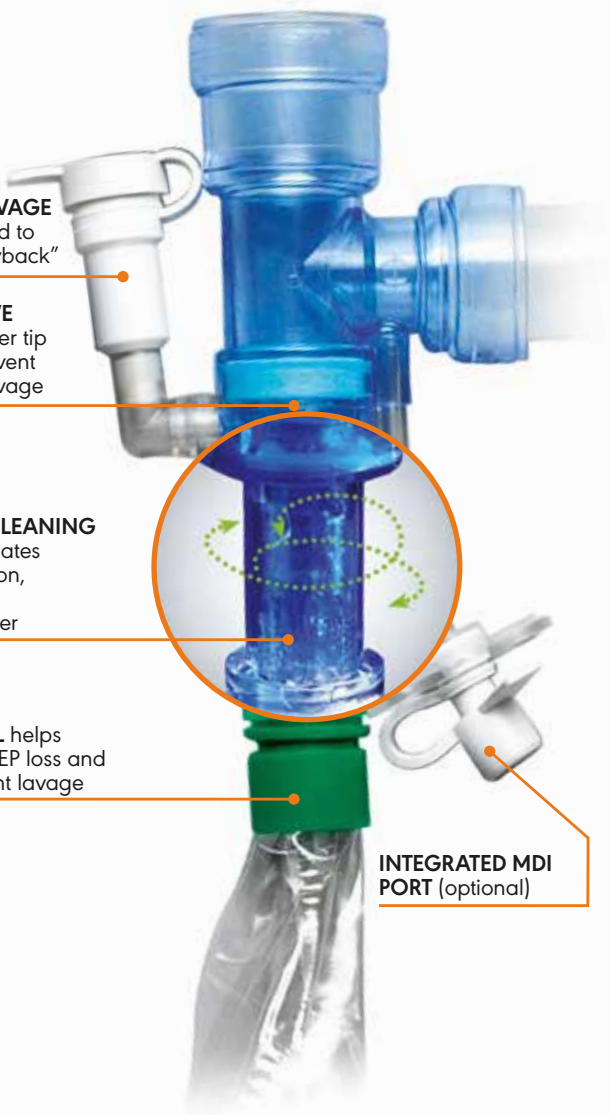
From the leader in closed suctioning, AVANOS* Closed Suction Systems have advanced infection control features that redefine the standard of care for closed suctioning. These unique infection prevention features have been proven to reduce cross-contamination, reducing ICU days and associated costs.[6] With a solution to meet every patient need, AVANOS* Closed Suction Systems are a powerful tool in your fight against this deadly HAI.

"The pathogenesis of VAP...is linked to two separate but related processes: colonisation of the aerodigestive tract with pathogenic bacteria, and aspiration of contaminated secretions."

– Kollef, et al. Respiratory Care, 2005

PROVEN TO PROVIDE AN 89% CLEANER CATHETER TIP.[7]

AVANOS* Turbo-Cleaning Closed Suction System, which features BALLARD* Technology, is the only catheter that retracts within a unique, isolated and vacuum-sealed turbulent cleaning chamber. The turbulent cleansing action results in an 89% cleaner catheter tip compared to a standard closed suction system.[7] This reduced colonisation may help reduce risk of VAE in your ventilated patients.



ONE-WAY LAVAGE PORT designed to prevent "sprayback"

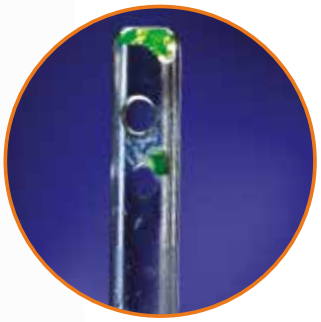
HINGED VALVE isolates catheter tip and helps prevent inadvertent lavage

TURBULENT CLEANING CHAMBER creates cleansing action, resulting in a cleaner catheter

PEEP SEAL helps reduce PEEP loss and inadvertent lavage

INTEGRATED MDI PORT (optional)

AVANOS* TURBO-CLEANING CLOSED SUCTION SYSTEM
cleaned in the isolated, turbulent cleaning chamber



STANDARD CLOSED SUCTION SYSTEM
cleaned by usual method of squeezing saline vial to dispense

SEALED BY OUR PATENTED "PEEP SEAL" TECHNOLOGY, the suction and saline produce turbulent cleansing action, for a cleaner catheter tip

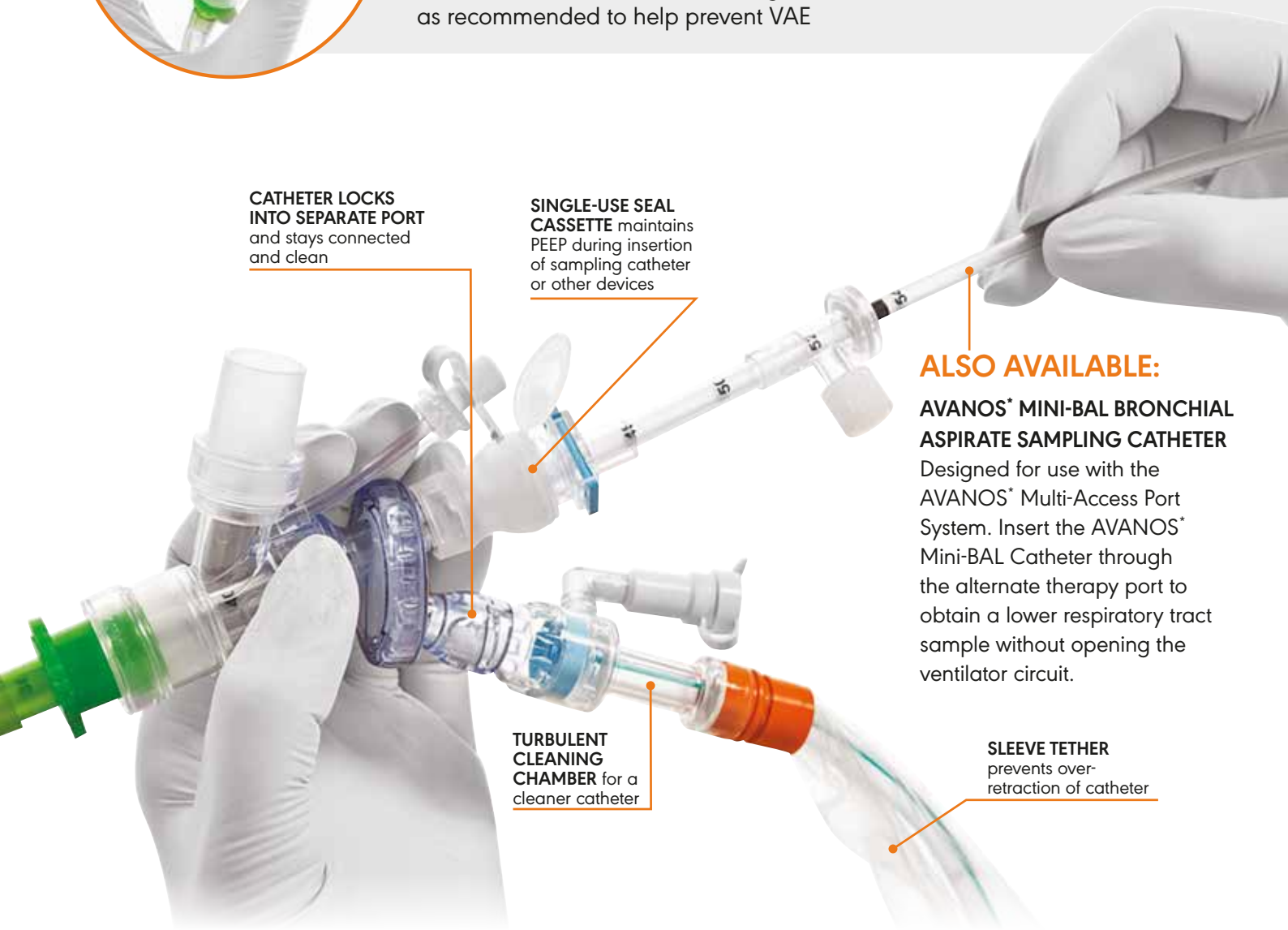
MULTIPLE ACCESS. MULTIPLE PROCEDURES. ONE CLOSED CIRCUIT.

AVANOS* Multi-Access Port Closed Suction System features a compact rotating manifold that provides multiple ports to access the patient's airway without jeopardising integrity of the closed circuit. And a closed circuit helps you protect your patient from cross-contamination and VAE.

PACKAGE INCLUDES AVANOS* TURBO-CLEANING CLOSED SUCTION SYSTEM CATHETER
Additional replacement catheters available

ROTATING MANIFOLD LOCKS INTO PLACE WITH A CLICK for reassurance that circuit remains sealed

CLINICIANS CAN PERFORM SUCTIONING AND OTHER PROCEDURES SUCH AS BRONCHOALVEOLAR LAVAGE, BRONCHOSCOPY, OR MDI DRUG DELIVERY while maintaining a closed vent circuit as recommended to help prevent VAE



ALSO AVAILABLE:

AVANOS* MINI-BAL BRONCHIAL ASPIRATE SAMPLING CATHETER
Designed for use with the AVANOS* Multi-Access Port System. Insert the AVANOS* Mini-BAL Catheter through the alternate therapy port to obtain a lower respiratory tract sample without opening the ventilator circuit.

As a global leader in VAE prevention, Avanos offers a comprehensive range of products, education, in-service training, and compliance programs to assist you as you develop your best-practice protocol that can help protect your patients from VAE.

AVANOS* VAE SOLUTIONS:

- Closed Suction Systems
- Bronchial Aspirate Sampling Catheter
- Endotracheal Tubes
- Oral Care Solutions

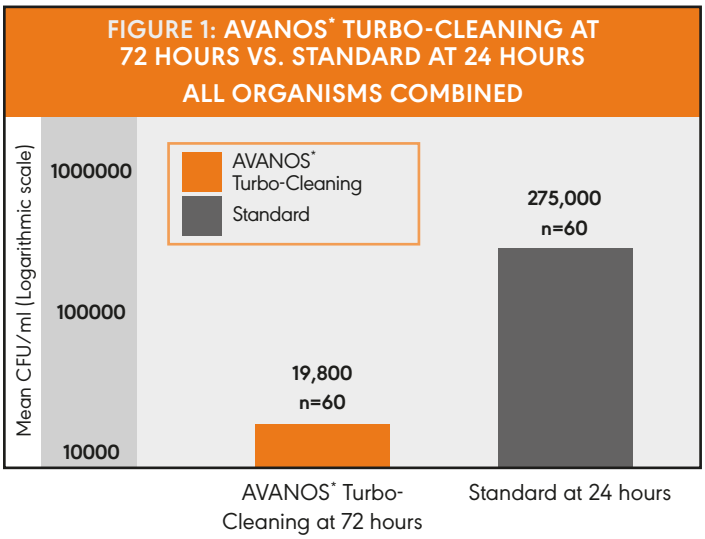


FIGURE 1: AVANOS* Turbo-Cleaning Closed Suction Systems, at 72 hours, show over an (89%) reduction in mean catheter tip colonisation compared to the control catheters at 24 hours ($p<0.001$)[7]

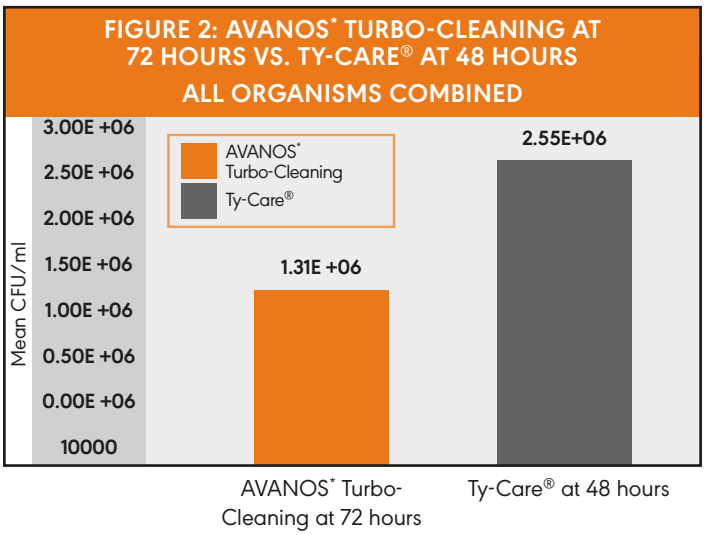


FIGURE 2: Turbo-Cleaning Closed Suction Systems at 72 hours show a (50%) reduction in mean catheter tip colonisation compared to the control Ty-Care® catheters at 48 hours.[8]

References **1.** Guidelines For Preventing Healthcare Associated Pneumonia, 2003, CDC Centers For Disease Control. **2.** Chastre J, Fagon J. Ventilator-Associated Pneumonia, Crit Care Med, 2002; 165:867-903. **3.** Hess DR, Kallstrom TJ, Mottram CD, Myers TR, Sorenson HM, Vines DL; American Association for Respiratory Care.Care of the ventilator circuit and its relation to ventilator-associated pneumonia.Respir Care. 2003 Sep;48(9):869-79. **4.** Maggiore SM, Lellouche F, Pigeot J, Taille S, Deye N, Durrmeyer X, Richard JC, Mancebo J, Lemaire F, Brochard L.Prevention of endotracheal suctioning-induced alveolar derecruitment in acute lung injury. Am J Respir Crit Care Med.2003 May 1;167(9):1215-24 . **5.** Freytag CC, Thies FL, Konig W, Welte T. Infection, Clinical and Epidemiological Society, 31-2003-No. 1. **6.** Kollef, MH, Prentice D, Shapiro SD, Fraser VJ, Silver P, Trovillion E, Weilitz P, Von Harz B, St. John R., Mechanical Ventilationwith or without Daily Changes of In-Line Suction Catheters, Am J Respir Crit Care Med., Volume 156, Number 2, August 1997,466-472. **7.** Compared to Ballard* TrachCare* 24-hour closed suction systems. Ballard* Critical Care Products Trach Care* 72Microbiology Report, Nelson laboratories Final Reports, Laboratory Numbers 18343, 163901.1. **8.** Compared to Ty-Care® Catheter at 48 hours. Trach Care* 72 versus Ty-Care® Microbiology Report Sales Sheet.

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