

# TWO-YEAR STUDY TO EVALUATE Daily Endotracheal Tube (ETT) Cleaning Protocol

## STUDY TYPE:

Abstract

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## INTRODUCTION/HYPOTHESIS

McLaren Health Care (MHC), Grand Blanc, Michigan, is a fully integrated health network committed to quality evidence-based patient care and cost efficiency. MHC and its 10 hospitals initiated a two year ICU project that included CUSP 4 MVP-VAP (CUSP), a national collaborative quality improvement project funded through the Agency for Healthcare Research

and Quality and a daily endotracheal tube (ETT) cleaning protocol using the endOclear® Restore™ (ECR) device. The purpose of the ICU project was to improve care for mechanically ventilated (MV) patients as measured by objective outcome measurements (OOMs) and evaluate the benefits of daily ETT cleaning.

The purpose of this study was to compare the OOMs with hospitals enrolled in Cohort 2 of the CUSP project. Cohort 2 consisted of 52 hospitals (74 ICUs) in 16 states. As part of CUSP, the project advocated three main interventions to improve care for MV patients: Daily Care Processes (DCPs), Early Mobility and Low Tidal Volume Ventilation. MHC added cleaning the ETT prior to the weaning trials using the ECR as part of the DCPs. The ECR is a sterile, single use, mechanically operated wiper.

## METHODS

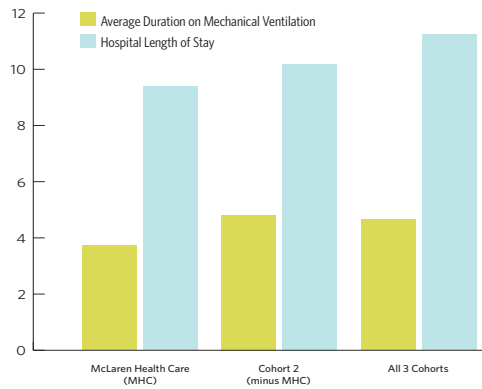
This study is an IRB exempt, observational, retrospective, multiple centered study to evaluate the outcomes of daily ETT cleaning of patients on MV >24 hours. The primary endpoints are average duration of MV and average hospital length of stay. An independent sample t-test was used to compare the means of the independent variables for both endpoints. Alpha of 0.05 was used and data is mean  $\pm$ SD.

## RESULTS

The 19 month average duration of mechanical ventilation for Cohort 2 (minus MHC) was  $4.8 \pm 0.4$  days ( $n=57,761/11,915$ ) per subject compared to MHC at  $3.7 \pm 0.3$  days ( $n=24,320/6,525$ ) per subject resulting in a difference of  $1.1 \pm 0.3$  days ( $p < 0.01$ ). During the same 19 month period, the average hospital length of stay for Cohort 2 (minus MHC) was  $10.2 \pm 0.7$  days ( $n=122,591/11,915$ ) per subject compared to MHC at  $9.4 \pm 0.7$  day ( $n=61,047/6,525$ ) per subject resulting in a difference  $0.8 \pm 0.7$  days ( $p < 0.01$ ).

## CONCLUSION

All of the hospitals in Cohort 2 implemented evidence-based best practices for the MV patients. MHC added daily cleaning of the ETT as part of their DCPs and was able to demonstrate that the removal of adherent ETT secretions with the use of the ECR device prior to weaning trials improves objective outcome measures and can lead to earlier liberation from MV, reduced hospital length of stays and potential cost savings.



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**Nine (9) hospitals in the McLaren IDN (part of Cohort 2, comprising 52 hospitals and 18,626 patients) added daily ETT cleaning with the endOclear Restore prior to the SBT as part of the Daily Care Processes.**