

THORAGUARD® DIGITAL DRAINAGE FOLLOWING THORACIC SURGERY

Guideline Recommendations on the Benefits of and Best Practices in the Utilization of Digital Drainage after Thoracic Surgery.

Digital chest drains have been clinically proven to outperform legacy systems, delivering benefits for both patients and providers that include¹⁻³:

- Shorter postoperative length of stay (LOS)
- Shorter duration of chest tube placement
- Fewer complications
- Lower cost of care
- Improved patient and provider satisfaction



Safeguard patient recovery.
CONTINUOUSLY.

Featured Guidelines

Several international societies have published guidelines that support the utilization of digital drainage systems after thoracic surgery.



The Society of Thoracic Surgeons Expert Consensus Document on the Management of Pleural Drains After Pulmonary Lobectomy: Expert Consensus Document⁴

Authors: Kent MS, Mitzman B, Diaz-Gutierrez I, et al.

Published in the *Annals of Thoracic Surgery*, 2024



Guidelines for Enhanced Recovery after Lung Surgery: Recommendations of the Enhanced Recovery After Surgery (ERAS®) Society and the European Society of Thoracic Surgeons (ESTS)⁵

Authors: Batchelor TJP, Rasburn NJ, Abdelnour-Berchtold E, et al.

Published in the *European Journal of Cardio-Thoracic Surgery*, 2019



The Society for Translational Medicine: Clinical Practice Guidelines for the Postoperative Management of Chest Tube for Patients Undergoing Lobectomy⁶

Authors: Gao S, Zhang Z, Aragón J, et al.

Published in the *Journal of Thoracic Disease*, 2017

Rationale for Utilization of Digital Drainage Systems

Studies demonstrate that when compared to legacy systems, digital chest drains result in:



SHORTER CHEST TUBE DURATION^{4,5}



SHORTER POSTOPERATIVE LOS^{4,5}



LOWER COST OF CARE^{4,6}



USER SATISFACTION⁴

Rationale for Utilization of Digital Drainage Systems

ACCURATE MONITORING

Quantitative measurements of air leaks and fluid drainage provide objective standards for chest tube removal.⁶

CONTINUOUS AIR LEAK MONITORING

Real-time air leak measurements and trending displays allow clinicians to monitor changes in air leaks.^{4,5}

REDUCED INTER-OBSERVER VARIABILITY

Eliminating subjective interpretations leads to more informed decision-making² and more consistent patient care.^{4,6}

Digital drainage systems should be used to **reduce intra-observer variability, improve decision-making, and facilitate early ambulation.**⁴⁻⁶

EARLY PATIENT MOBILIZATION

Allowing for patient movement without additional equipment regardless of suction settings promotes early mobilization, which is beneficial for recovery.^{4,5}

IMPROVED PATIENT AND PROVIDER SATISFACTION

Patients report improved mobility and more comfort.^{4,6}

Staff report higher satisfaction with setup, maintenance, and the interpretation of messages and warnings on the device.^{4,6}



BEST PRACTICES

Optimizing Utilization of Digital Drainage

To maximize the value and impact of utilizing digital drainage systems after thoracic surgery, experts recommend the following:

PRIORITIZE BROAD UTILIZATION

- Educate your entire department or team about the clinical benefits of adopting digital drainage systems, including the unique benefits for each user type
- Use digital drainage consistently to help optimize outcomes for all thoracic patients

IDENTIFY MEASURABLE OUTCOMES

- Identify all meaningful ways to assess impact and develop methods for measurement

DEVELOP PROTOCOLS

- Create standardized procedures and ensure staff training for effective implementation
- Leverage digital decision-assist technology to help ensure consistency

MONITOR OUTCOMES

- Track patient outcomes and LOS to demonstrate impact
- Request user feedback on functionality and/or training and education

CONDUCT COST ANALYSIS

- Perform a detailed cost-benefit analysis to assess the financial impact of reducing LOS and gaining more available beds in your hospital
- Discuss with additional service lines to assess potential benefit across your institution

BRING YOUR CHEST DRAINAGE MANAGEMENT INTO THE MODERN ERA



THORAGUARD INTELLIGENT CHEST TUBE MANAGEMENT

Scan to learn more about Thoraguard for thoracic postoperative management at centese.com/thoracic-surgery

References:

1. Geraci TC, Chang SH, Shah SK, Kent A, Cerfolio RJ. Postoperative air leaks after lung surgery: predictors, intraoperative techniques, and postoperative management. *Thorac Surg Clin*. 2021;31(2):161-169. doi:10.1016/j.thorsurg.2021.02.005
2. Geraci TC, Sorensen A, James L, et al. Use of a novel digital drainage system after pulmonary resection. *J Thorac Dis*. 2022;14(9):3145-3153. doi:10.21037/jtd-22-574
3. McCormack AJ, El Zaeedi M, Geraci TC, Cerfolio RJ. The process and safety of removing chest tubes 4 to 12 hours after robotic pulmonary lobectomy and segmentectomy. *JTCVS Open*. 2023;16:909-915. doi:10.1016/j.xjon.2023.09.028
4. Kent MS, Mitzman B, Diaz-Gutierrez I, et al. The Society of Thoracic Surgeons expert consensus document on the management of pleural drains after pulmonary lobectomy: expert consensus document. *Ann Thorac Surg*. 2024;118(4):764-777. doi:10.1016/j.athoracsur.2024.04.016
5. Batchelor TJP, Rasburn NJ, Abdelnour-Berchtold E, et al. Guidelines for enhanced recovery after lung surgery: recommendations of the Enhanced Recovery After Surgery (ERAS®) Society and the European Society of Thoracic Surgeons (ESTS). *Eur J Cardiothorac Surg*. 2019;55(1):91-115. doi:10.1093/ejcts/ezy301
6. Gao S, Zhang Z, Aragón J, et al. The Society for Translational Medicine: clinical practice guidelines for the postoperative management of chest tube for patients undergoing lobectomy. *J Thorac Dis*. 2017;9(9):3255-3264. doi:10.21037/jtd.2017.08.165
7. Data on file at Centese, Inc.

Indications for use: The Thoraguard System is indicated for use in aspiration and removal of surgical fluids, tissue, gases, bodily fluids or infectious materials. The Thoraguard System is indicated for all situations where chest drains are applied; especially for thoracic drainage in the pleural and mediastinal cavity in situations such as pneumothorax, after cardiac or thoracic surgery (post-operative), thorax injury, pleural effusion, pleural empyema or other related conditions. The Thoraguard System is intended for use on patients in appropriate care settings.

Caution: Federal (US) law restricts Thoraguard to sale by or on the order of a physician. Thoraguard is not cleared for use outside of the US.

info@centese.com | 888.220.0040 | centese.com

Centese, Inc.

4156 S. 52nd St. Omaha, NE 68117
©2024. All rights reserved.

LBL-2341 Rev 0

CENTESE