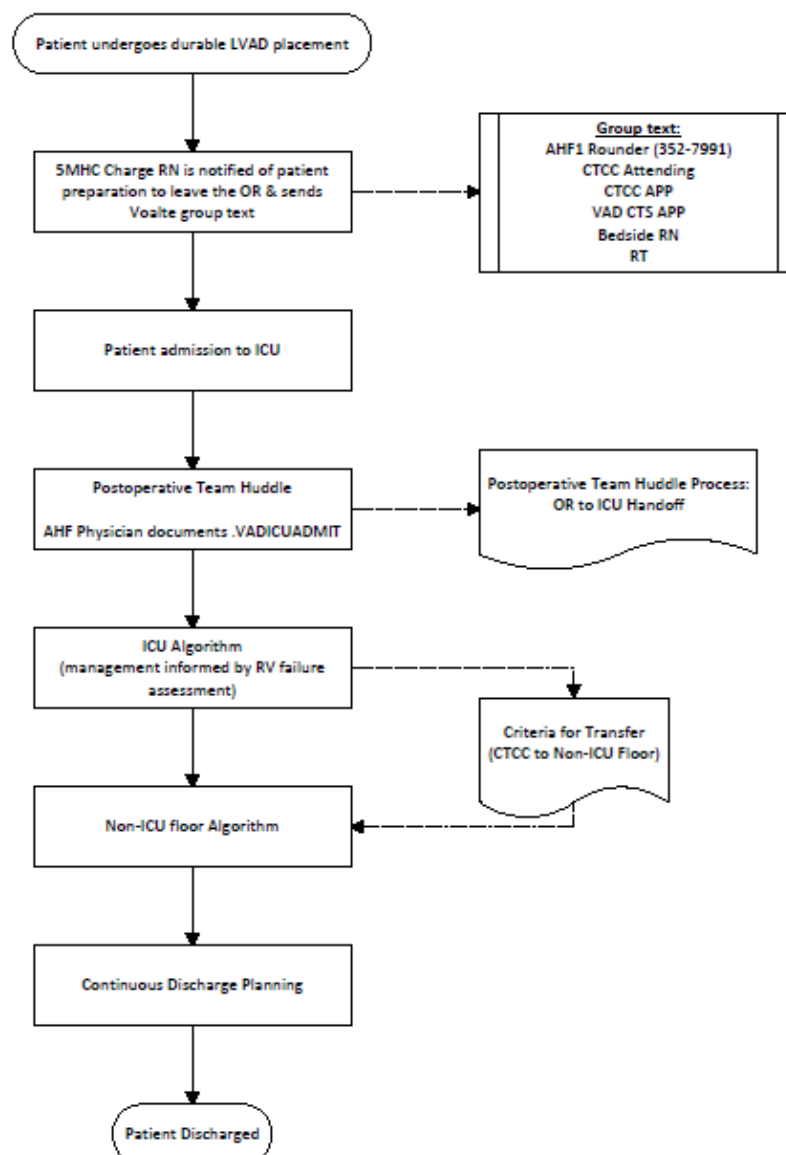


Guideline or Pathway: Left Ventricular Assist Device (LVAD) Implantation to Hospital Discharge

Updated: December 13, 2021

Clinical algorithm:

LVAD CLINICAL PATHWAY: Master Algorithm



Clinical pathway summary

CLINICAL PATHWAY NAME: LVAD Implantation to Hospital Discharge

PATIENT POPULATION AND DIAGNOSIS: Adult inpatient with advanced heart failure requiring implantation of durable LVAD; EXCLUDES patients who exit the OR on BiVAD support

APPLICABLE TO: Spectrum Health Meijer Heart Center

BRIEF DESCRIPTION: This clinical pathway serves as a tool to guide care of patients upon their admission to the ICU following implantation of durable LVAD until time of hospital discharge. The goals of this pathway are to achieve a shorter overall length of stay and to decrease time to ICU liberation.

OVERSIGHT TEAM LEADER(S): Dr. Sangjin Lee, Dr. Brian Trethowan, Dr. Marzia Leacche

OWNING EXPERT IMPROVEMENT TEAM (EIT): VAD & Transplant System-Wide EIT

MANAGING CLINICAL PRACTICE COUNCIL (CPC): Cardiovascular Health

CPC APPROVAL DATE: 12/13/21

OTHER TEAM(S) IMPACTED: CTS, CTCC, Advanced Heart Failure, Anesthesia, Nursing, Respiratory Therapy, Pharmacy, Care Management, Rehabilitation Services, VAD Multidisciplinary Team (MSW, Dietician, VAD Coordinator, Financial Coordinator)

IMPLEMENTATION DATE: 12/15/21

LAST REVISED: 12/13/21

FOR MORE INFORMATION, CONTACT: Kelli Britten, Dr. Sangjin Lee

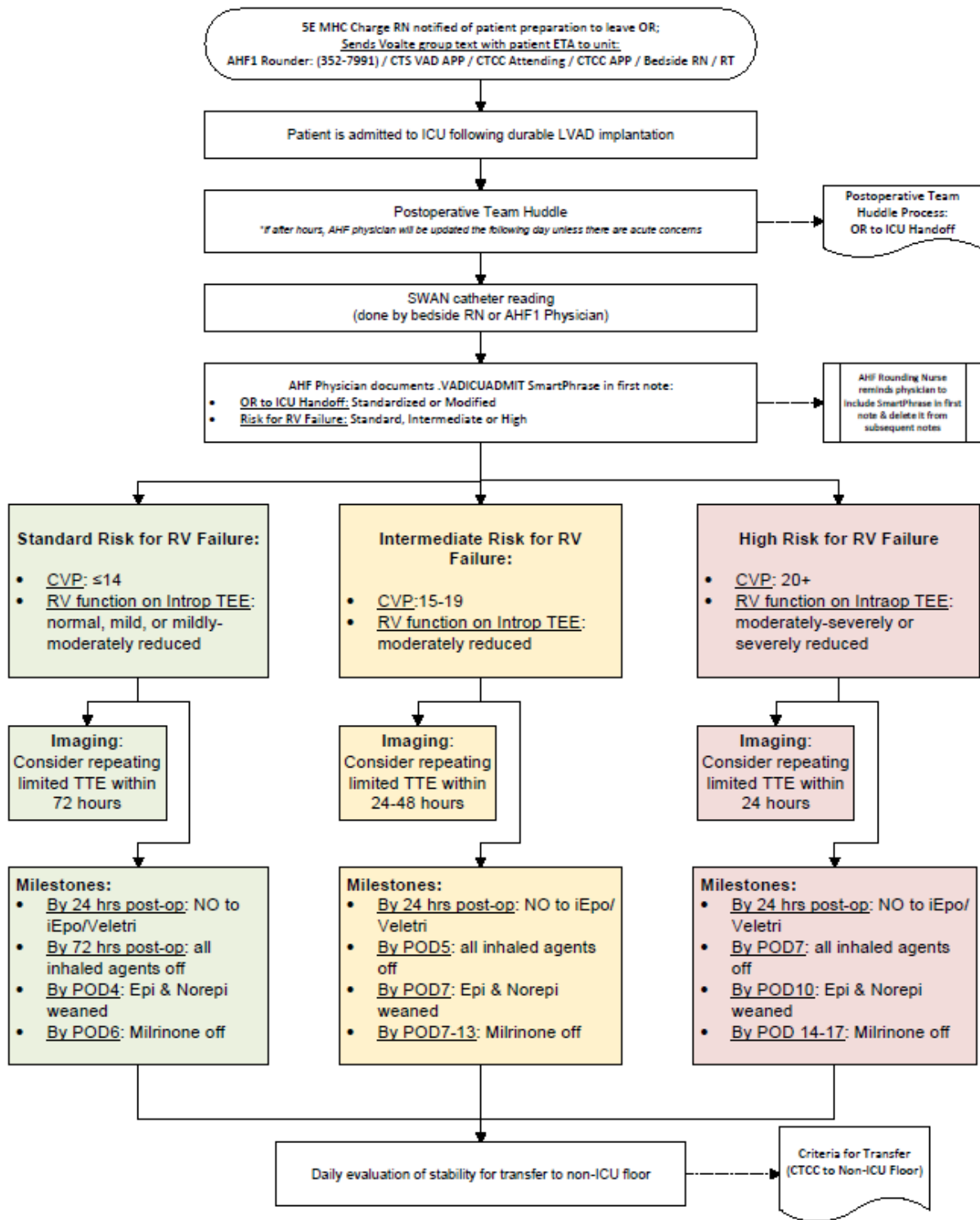
Clinical pathways clinical approach

TREATMENT AND MANAGEMENT:

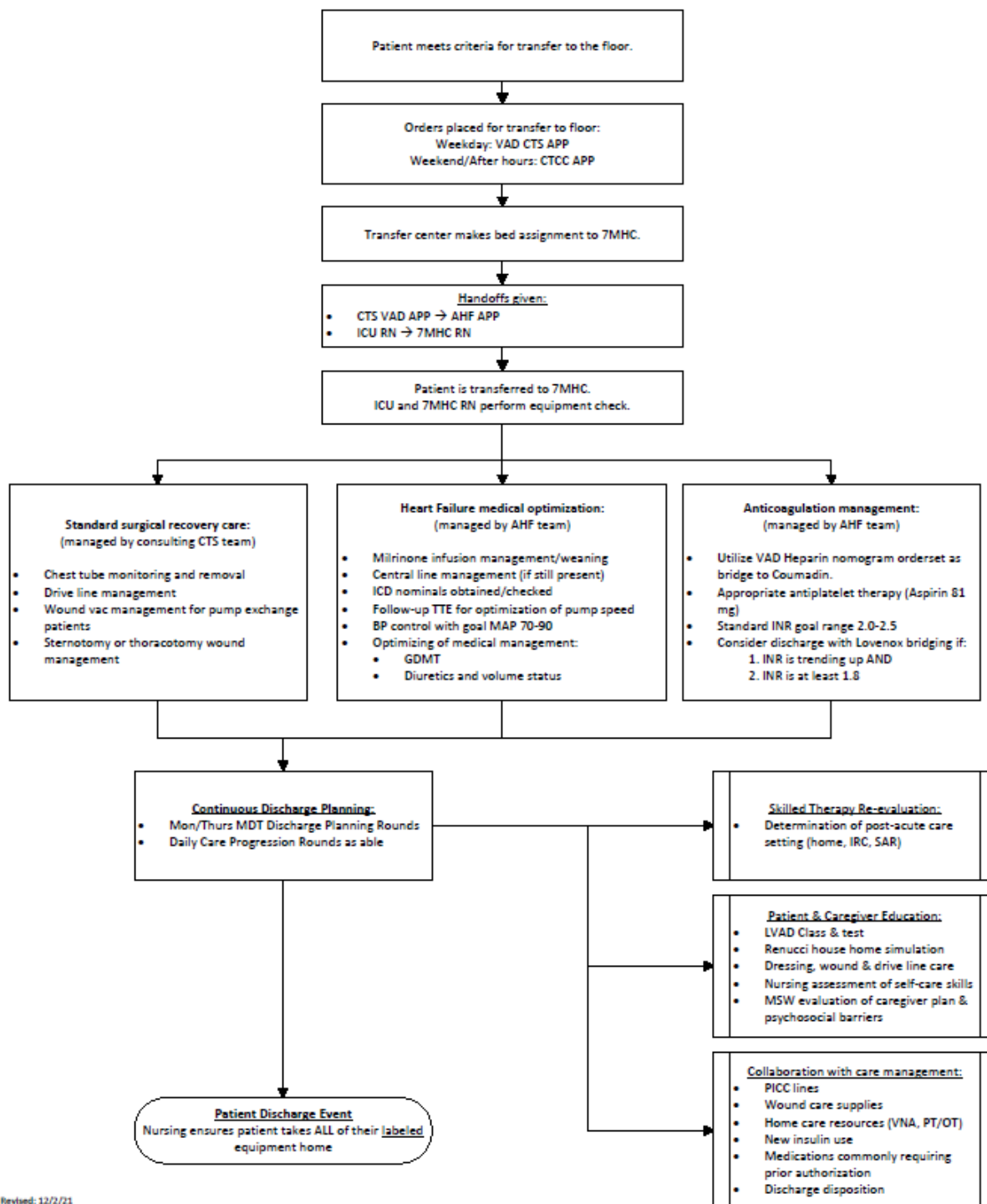
This clinical pathway will serve as a tool to guide patient care following implantation of a durable LVAD. After implantation, patient management is individualized by clinical presentation. This is impacted greatly by each patient's risk for developing early right ventricular (RV) dysfunction or failure. RV failure contributes to morbidity and mortality following implantation of LVAD, and therefore must be addressed specifically to manage these complications and continue working toward hospital discharge.

Patient transition from the OR to the ICU is a critical time for patient safety and interdisciplinary handoff ensures an accurate understanding amongst all care team members of intraoperative issues that may impact patient care in the initial ICU stay. Standardized handoff is supported by literature. Additionally, the decision to transfer out of the ICU to the non-ICU floor can be better guided by objective criteria to improve the timeline to ICU liberation.

LVAD CLINICAL PATHWAY: ICU Algorithm



LVAD CLINICAL PATHWAY: Transfer & Non-ICU Floor Algorithm



References:

Holman, W.L., Kociol, R.D., & Pinney, S (2020). Postoperative VAD Management: Operating Room to Discharge and Beyond: Surgical and Medical Considerations. In *Mechanical Circulatory Support: A companion to Braunwald's Heart Disease* (2nd ed., pp.131-143). Elsevier.

Cotts, W. et al. (2014). Predictors of hospital length of stay after implantation of a left ventricular assist device: An analysis of the Intermacs registry. *Journal of Heart and Lung Transplantation*, 33(7), 682-688. <https://doi.org/10.1016/j.healun.2014.02.022>

Feldman et al. (2013). The 2013 International Society for Heart and Lung Transplantation guidelines for mechanical circulatory support: Executive summary. *Journal of Heart and Lung Transplantation* 32(2), 157-187. <http://dx.doi.org/10.1016/j.healun.2012.09.013>

Kirklin, J.K et al. (2020). American Association for Thoracic Surgeon/International Society for Heart and Lung Transplantation guidelines on selected topics in mechanical circulatory support. *Journal of Heart and Lung Transplantation* 39(3), 187-219. <https://doi.org/10.1016/j.jtcvs.2019.12.021>

Birks, E.J. et al (2011). Reversal of severe heart failure with a continuous-flow left ventricular assist device and pharmacological therapy: a prospective study. *Circulation* 123(4), 381-390. <https://doi.org/10.1161/CIRCULATIONAHA.109.933960>

Wever-Pinzon et al. (2016). Cardiac recovery during long-term left ventricular assist device support. *Journal of American College of Cardiology*, 68(14), 1540-1553.

Agno W. et al. (2012). Oral anticoagulant therapy: Antithrombotic therapy and prevention of thrombosis: 9th ed: American College of Chest Physicians evidence-based clinical practice guidelines. *Chest*, 141(2 Suppl), e44s-88s. <https://doi.org/10.1378/chest.11-2292>

Chatterjee, S. et al. (2019). Handoffs from the operating room to the intensive care unit after cardiothoracic surgery: From the Society of Thoracic Surgeons workforce on critical care. *The Annals of Thoracic Surgery*, 107(2), 619-630. <https://doi.org/10.1016/j.athoracsur.2018.11.010>

STS Intermacs. (2021, October 11). Appendix A: Adverse Events Definitions. <https://www.uab.edu/medicine/intermacs/intermacs-documents>

Nates, J.L. et al. (2016). ICU Admission, Discharge, and Triage Guidelines: A framework to enhance clinical operations, development of institutional policies, and further research. *Critical Care Medicine*, 44(8), 1553-1602. <https://doi.org/10.1097/CCM.0000000000001856>

Lindenmuth, D.M. et al. (2021). Enhanced recovery after surgery in patients implanted with left ventricular assist device. *Journal of Cardiac Failure*, 27(11), 1195-1202. <https://doi.org/10.1016/j.cardfail.2021.05.006>

Stelfox, H.T. et al. (2015). A scoping review of patient discharge from intensive care; Opportunities and tools to improve care. *Chest*, 147(2), 317-327. <https://doi.org/10.1378/chest.13-2965>