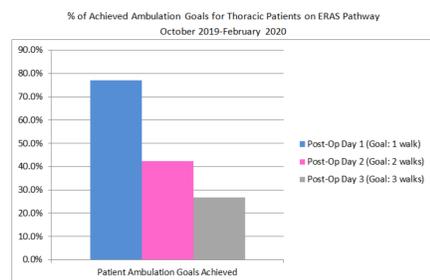


Background & Problem

- Early ambulation following thoracic surgery is associated with improved patient outcomes such as prevention of DVTs, lower risk of hospital acquired pneumonia, better pain management, and decreased length of stay.
- The thoracic surgery Enhanced Recovery After Surgery (ERAS) pathway outlines post-operative benchmarks for the interdisciplinary team.

Floor	Service-Specific	Pain Management	Nutrition & GI Recovery	Early Mobilization	Drains and Lines
POD 0		•Scheduled ketorolac 15 mg IV q 8h x 24 hrs •Ibuprofen 600 mg PO q 8 x 24 hrs	•Scheduled multimodal medications per thoracic surgery service: •Gabapentin 300 mg PO TID (100mg TID if age >70), throughout admission (with prescription to continue until 4 weeks post op) •Fentanyl 500 mcg PO QID throughout admission	•Clear liquid diet •Advance to regular diet as tolerated	•Morning surgery: OOB & Ambulation on POD 0 •Daily ambulation at least 3 X daily •Daily ambulation distances recorded by nursing staff in Epic chart
POD 1		•Transition scheduled NSAID to Ibuprofen 600 mg PO q 6 PRN throughout admission	•Epidural catheter management per Acute Pain Service (APS) while chest tubes are in place	•Afternoon surgery: OOB & Ambulation on POD 1 •Daily ambulation at least 3 X daily •Daily ambulation distances recorded by nursing staff in Epic chart	•Female patients: Foley removed on post-operative day one, unless clinically indicated by surgical team (e.g., for strict monitoring of intake and output). •Male patients: Without an epidural: Foley removed on post-operative day one, unless clinically indicated by surgical team (e.g., for strict monitoring of intake and output). •With an epidural: Foley removed after removal of epidural catheter, unless clinically indicated by surgical team (e.g., for strict monitoring of intake and output).
POD 2		•PCA management by thoracic surgery or APS if patient has an epidural •Hydromorphone 1st line epidural •Fentanyl 2nd line epidural for PCA			
POD 3+					

- Cardiothoracic Stepdown Unit (CTSU) was not meeting the ambulation goal for thoracic surgery patients
- CTSU saw an increase in the number of patients who transferred to a higher level of care due to respiratory complications.



Goals & Metrics

- Increase the number of patients who meet daily ambulation targets
- Improve employee engagement and initiative with carrying out pulmonary hygiene interventions
- Outline a timeline in which patient ambulation should occur and provide clarity for which team members are responsible for which pulmonary hygiene tasks
- Decrease the number of patients who transferred from CTSU to the intensive care unit (ICU)

Methods & Approach

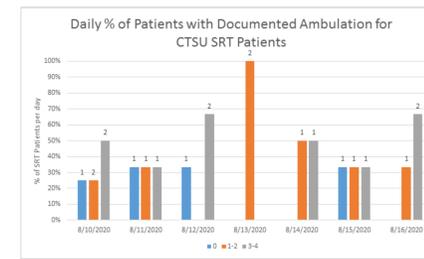
Data Review

- Performed deep dives of thoracic surgery patients transferred to the ICU
- Findings showed respiratory complications to be the main reason for transfers, accounting for 41%
- Seven percent of transfers developed a respiratory/ VAE/ VAP infection

FY	SRT CTSU Transfers to ICU
FY19	20
FY20	27

Employee Engagement

- Unit leadership met with each individual staff member to provide feedback on ambulation goal compliance and solicited process improvement ideas from team members.
- Engaged service line quality coach to provide a weekly electronic ambulation report, which is shared with the interprofessional team via weekly updates.



CTSU Ambulation Pathway

- Using evidence-based guidelines, created a detailed post-operative ambulation pathway with pulmonary hygiene interventions



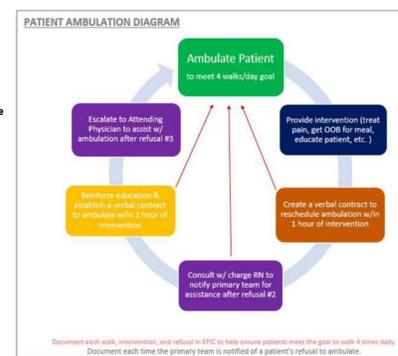
CTSU Ambulation Pathway

Standardized Interventions for Surgical Patients			
POD	Pulmonary Hygiene	Expected Interventions	Responsible party
POD 0:	1. Incentive Spirometry (IS) 2. Vest therapy 3. Out of bed to chair 4. WALK* 5. Pain management	1. Give IS to patient upon arrival to the unit. 2. Provide vest therapy every 6 hours for patients with a chest tube in place. 3. Get the patient to the chair upon arrival to unit. If patient is groggy upon arrival, perform within 6 hours of arrival to the unit. 4. Walk the patient at least once before going to bed. 5. Assess pain and offer prn medication around the clock.	1. NA or RN 2. RN 3. RN 4. NA with help of RN for first walk 5. RN
POD 1:	1. Incentive Spirometry (IS) 2. Vest therapy 3. Out of bed to chair 4. WALK* 5. Pain management	1. Make sure the incentive spirometer is near patient during hourly rounds. Document use every 4 hours (RNs) 2. Provide vest therapy every 6 hours for patients with a chest tube in place. 3. Get the patient to the chair by 0600 and for each meal. 4. Walk the patient for a goal of 3-4 walks per day 5. Assess pain and promote prn pain meds.	1. NA 2. RN 3. NA 4. NA & RN 5. RN
POD 2:	1. Incentive Spirometry (IS) 2. Vest therapy 3. Out of bed to chair 4. WALK* 5. Pain management	1. Reinforce IS use. Document use every 4 hours (RNs) 2. Provide vest therapy every 6 hours for patients with a chest tube in place. 3. Get the patient to the chair by 0600 and for each meal. 4. Walk the patient for a goal of 3-4 walks per day 5. Assess pain and promote prn pain meds.	1. NA 2. RN 3. NA 4. NA & RN 5. RN
POD 3 thru Discharge:	1. Incentive Spirometry (IS) 2. Vest therapy 3. Out of bed to chair 4. WALK* 5. Pain management	1. Reinforce IS use. Document use every 4 hours (RNs) 2. Provide vest therapy every 6 hours for patients with a chest tube in place. 3. Get the patient to the chair by 0600 and for each meal. 4. Walk the patient for a goal of 3-4 walks per day 5. Assess pain and promote prn pain meds.	1. NA 2. RN 3. NA 4. NA & RN 5. RN

*Note: Guidelines for walks on back.
Benefits: Decreases atelectasis; helps patients to clear airways, improves lung capacity, and improves bowel function after surgery. Having help the first walk decreases the chance of patient falls. Adequate pain control increases participation in pulmonary hygiene.

CTSU Ambulation Pathway

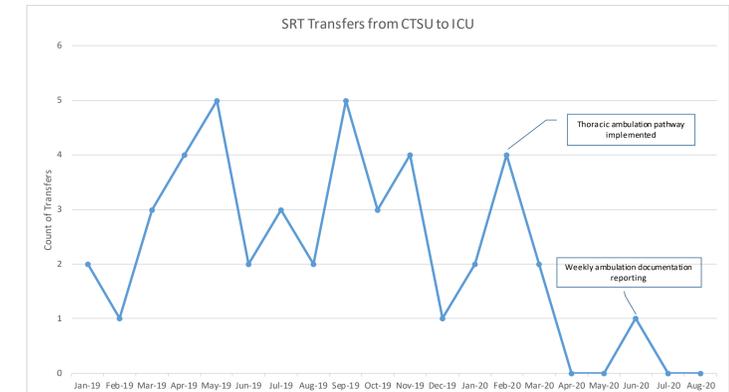
Walking timeframes
1st Walk – before 1100
2nd Walk – 1100-1500
3rd Walk – 1500-1900
4th Walk – before bedtime



Results & Findings



- Improvement of teamwork on CTSU
- Increase in thoracic surgery patients walking 1-2 times daily by 14%.
- Decrease in the number of thoracic surgery patients who transferred from CTSU to the ICU.
- Zero thoracic surgery patients transferred to the ICU due to respiratory complications since July 2020
- Zero patients with unit-acquired respiratory infections since March 2020.



Conclusions & Next Steps

Conclusion: Providing clear guidelines for post-operative patient ambulation improved employee engagement and team work, leading to an increase in number of thoracic surgery patients who meet the target for post-operative ambulation and improvement of patient outcomes.

Next Steps:

- Engaging thoracic surgery residents to help reinforce post-operative education for patients who refuse walks
- Outlining patient-specific pulmonary hygiene guidelines for deconditioned patients.