

# IMPLEMENTING AN EVIDENCE-BASED DISCHARGE BUNDLE FOR LUNG TRANSPLANT PATIENTS

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## BACKGROUND AND SETTING

- Large Midwest academic medical center
- Performs 30-40 lung transplants annually
- This lung transplant program uses a care model which includes lifetime post-transplant medical care
- Inpatient lung transplant service covers end-stage lung disease patients, pre- and post-lung transplant patients

## PROBLEM AND POPULATION

- All lung transplant recipients hospitalized at the center, including transplant hospitalization and any subsequent hospitalization
- 30-day hospital readmission rate in 2018 was 29%
- Hospital has QI goal to reduce 30-day hospital readmissions
- Discharge process for transplant hospitalization is standardized
- Hospital readmissions after transplant hospitalization do not include standardized discharge process

## GAP ANALYSIS

- Semi-structured focus groups with lung transplant team members:
  - Nurse practitioners
  - Pulmonologists
  - Pulmonary fellows
  - Nurse coordinators
  - Social workers
  - Pharmacist

# GAP ANALYSIS

- Themes from focus groups
  - No established way of tracking 30-day readmissions beyond initial transplant hospitalization
  - Attending pulmonologists are responsible for determining timing of discharge. Nurse practitioners and pulmonary fellows perform the discharge planning and logistical tasks
  - Follow-up phone calls and appointments are standardized for patients being discharged from their transplant hospitalizations.
  - For subsequent hospitalizations, the follow-up process is not as standardized.

## GAP ANALYSIS

- Communication from inpatient to outpatient team is not standardized
- Nurse follow-up phone calls after discharge are very standardized for transplant hospitalization but any subsequent readmissions do not have a standardized phone call protocol.
- Some patients receive medication schedule; others receive EHR printout

## PICO

In a lung transplant population does implementation of a standardized discharge bundle reduce 30-day hospital readmission rates?

# LITERATURE REVIEW

- Lung transplant hospital readmissions
  - Costly ~ \$87,000 per unplanned admission (Courtwright et al., 2017)
  - Can increase risk of complications (Osho et al., 2017; Lushaj et al., 2016)
- Causes of lung transplant readmissions are variable (Alrawashdeh et al., 2017)
- Paucity of literature regarding strategies for reducing readmissions for lung transplant patients specifically



# LITERATURE REVIEW

- Discharge bundles to reduce readmissions
  - A discharge bundle is a standardized discharge process or order set
  - Significant reduction in readmission rates for COPD patients (Pederson, Ersgard, Sorensen, and Larsen, 2017)
  - Some results indicate that intervening in both pre-discharge and post-discharge phases better than one or the other (subgroup analysis) (Braet, Weltens, & Sermeus, 2016)

# QUALITY IMPROVEMENT INITIATIVE

## Introduction of a discharge bundle for all lung transplant recipients

- Friday progress note states that team has discussed potential for weekend discharge
- Standardized medication schedule for all patients at discharge
- Scripted communication sent by inpatient team within 24 hours of discharge to transplant nurse coordinator and primary outpatient pulmonologist
- Patient follow-up clinic appointment scheduled and attended within 7-10 business days
- Three scripted follow-up phone calls within 7 business days, one from a nurse practitioner or pulmonologist

# OUTCOMES

Primary outcome: readmission rate

**Individual readmissions within 30 days of discharge**  

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**Total discharges**\*

\*Only post-lung transplant patients discharged to home setting eligible for readmission were included in the total number of discharges

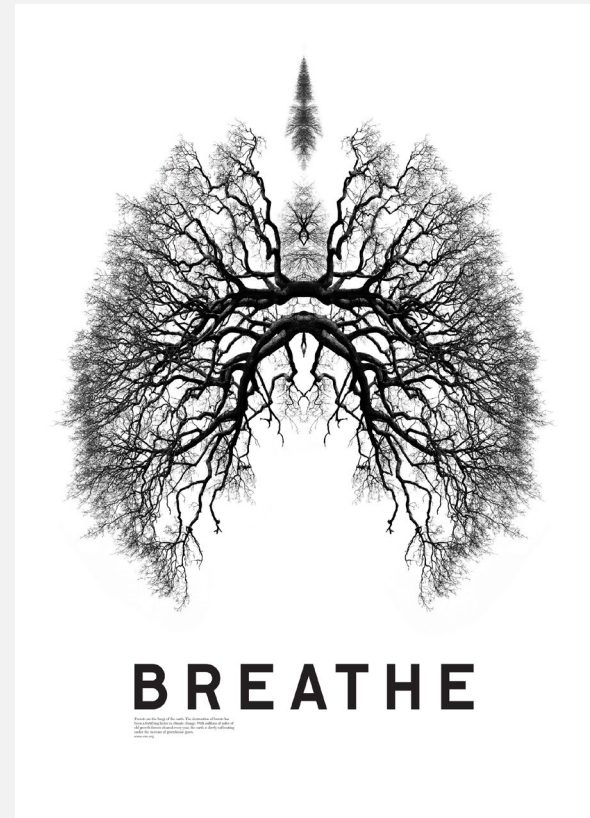
# OUTCOMES

## Secondary outcomes:

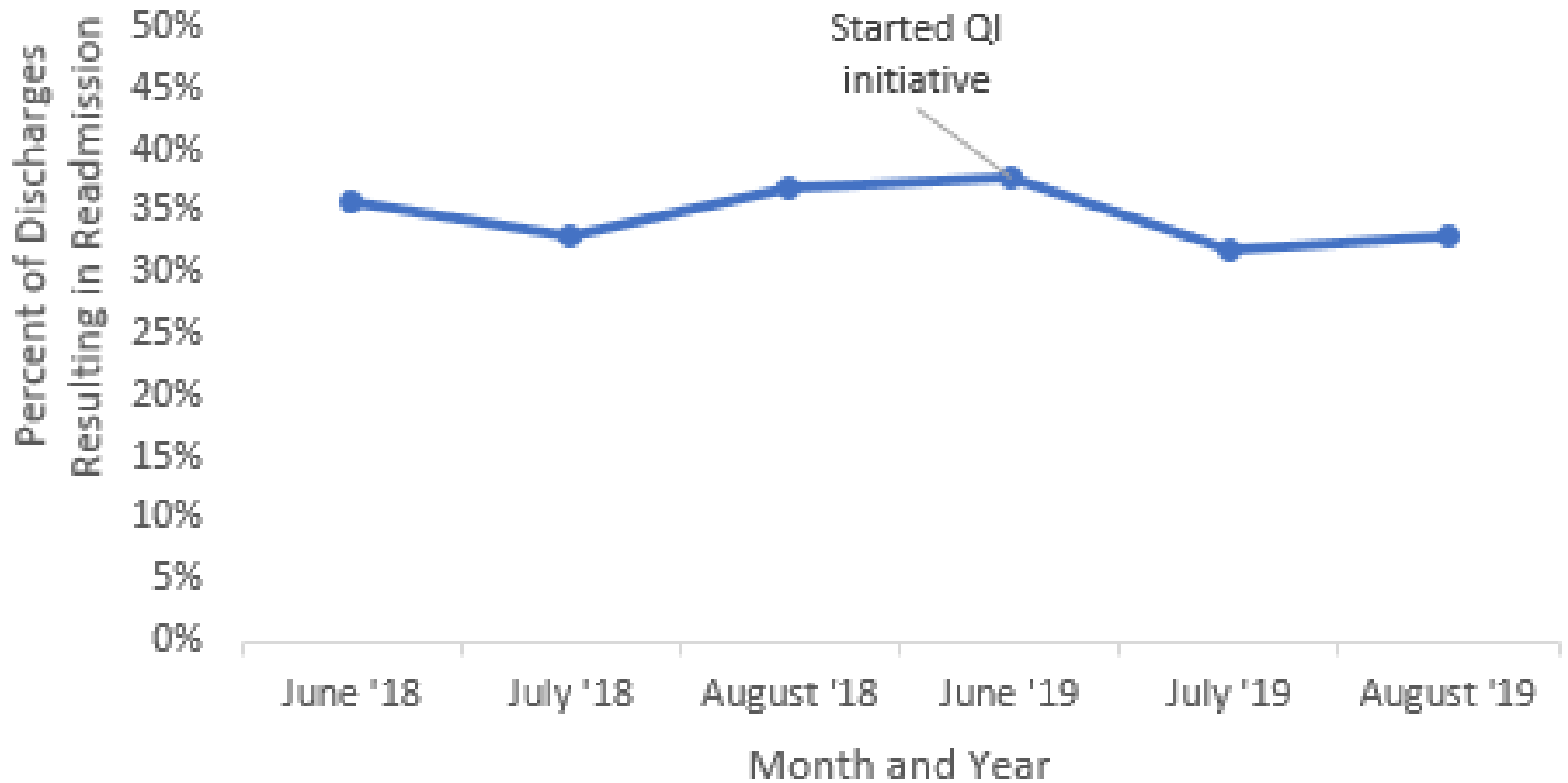
- Adherence to discharge bundle by staff performing discharges and follow-up care
- Semi-structured interviews with lung transplant team members to assess perceptions of discharges and readmissions

# TIMEFRAME

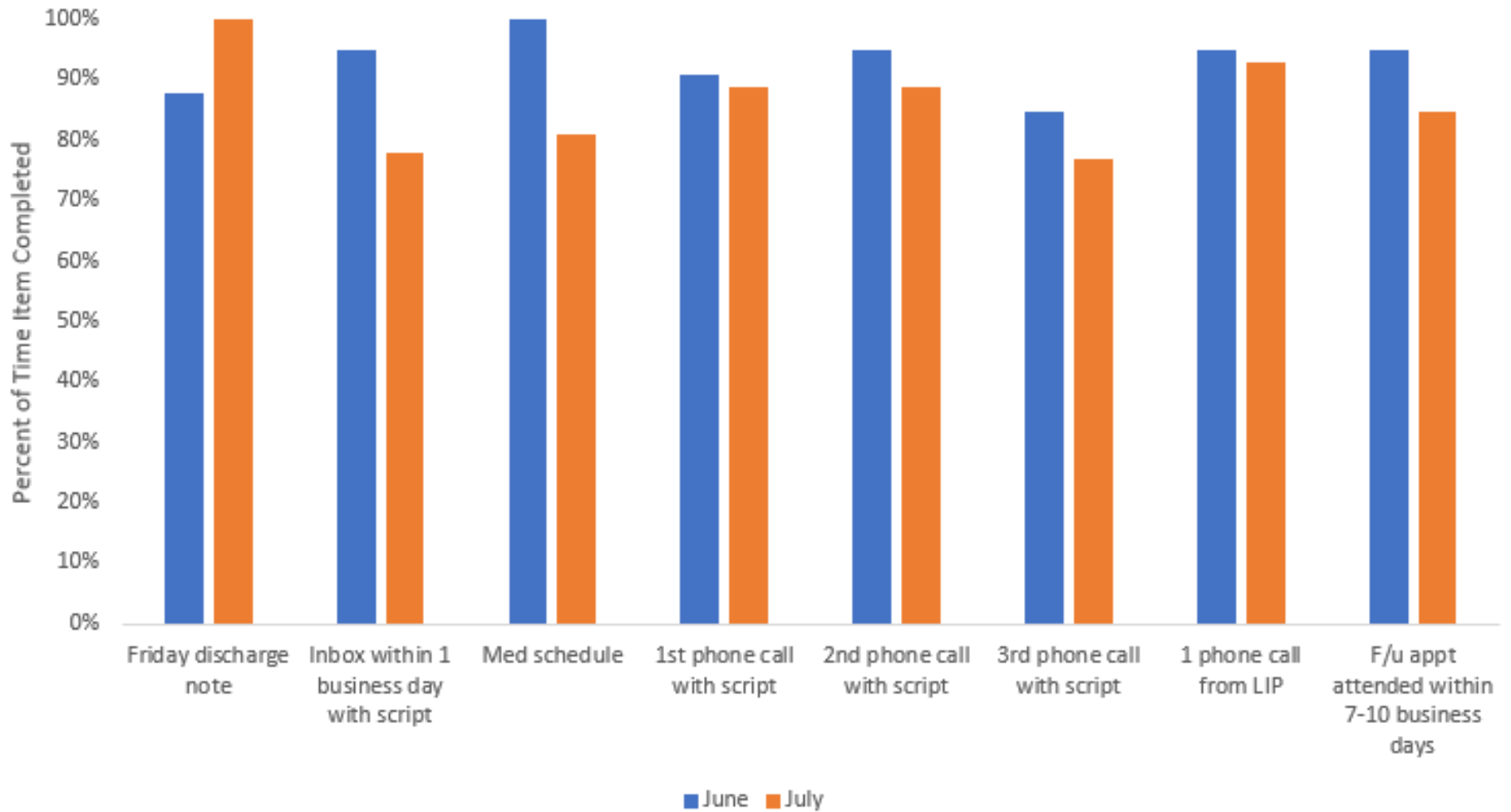
- June 1, 2019 – August 31, 2019



## 30-Day Readmission Rate



## Discharge Bundle Adherence Rates



## THEMES FROM POST-INITIATIVE FOCUS GROUPS

- Team communication and planning for discharge improved and started earlier during hospital admission
- Improvement in communication between inpatient and outpatient teams
  - Increased thoroughness
  - More timely
- Writing discharge summary note more streamlined



## IMPLICATIONS FOR NURSING PRACTICE

- Add to body of literature specific to lung transplant patients.
- Reinforce existing literature showing that standardizing the discharge process through the use of a discharge bundle can reduce readmissions.
- Produce valuable feedback from staff about standardization and integration with electronic health record and how this can contribute to increased efficiency and more streamlined workflow.

## PLAN FOR SUSTAINABILITY

- Incorporation of discharge bundle items into electronic health record and discharge planning process
  - Transplant medication schedule
  - Communication scripts
- Data report for tracking monthly readmission rate
- Incorporation into monthly programmatic quality assurance evaluation
- Continuous quality improvement evaluation and amendment of discharge bundle

## NEXT STEPS

- Team members will interview patients regarding their perceptions of discharge practices
- Evaluate readmission rates in the next 6-12 months
- Investigate other variables related to readmission rate
  - Immunosuppression level at time of discharge
  - Day of the week of discharge
  - Frailty score at time of discharge
  - Diagnosis at admission/diagnosis at discharge

# REFERENCES

Alrawashdeh, M., Zomak, R., Dew, M. A., Sereika, S., Song, M. K., Pilewski, J. M., & Devito Dabbs, A. (2017). Pattern and predictors of hospital readmission during the first year after lung transplantation. *American Journal of Transplantation*, 17, 1325-1333.

Braet, A., Weltens, C., & Serieus, W. (2016). Effectiveness of discharge interventions from hospital to home on hospital readmissions: A systematic review. *Joanna Briggs Institute Database of Systematic Reviews and Implementation Reports*, 14(2), 106-173. Doi:10.11124/jbisrir-2016-2381

Courtwright, A. M., Zaleski, D., Gardo, L., Ahya, V. N., Christie, J. D., Crespo, M., . . . Diamond, J. M. (2018). Causes, preventability, and cost of unplanned rehospitalizations within 30 days of discharge after lung transplantation. *Transplantation*, 102(5), 838-844. Doi:10.1097/TP.0000000000002101

Lushaj, E., Julliard, W., Akhter, S., Levenson, G., Maloney, J., Cornwell, R. D., . . . DeOliveira, N. (2016). Timing and frequency of unplanned readmissions after lung transplantation impact long-term survival. *The Annals of Thoracic Surgery*, 102(2), 378-384.

Osho, A. A., CastleBerry, A. W., Yerokun, B. A., Mulvihill, M. S., Rucker, J., Synder, L. D., . . . Hartwig, M. G. (2017). Clinical predictors and outcome implications of early readmission in lung transplant recipients. *The Journal of Heart and Lung Transplantation*, 36(5), 546-553. Doi:<https://doi.org/10.1016/j.healun.2016.11.001>

Pedersen, P. U., Ersgard, K. B., Soerensen, T. B., & Larsen, P. (2017). Effectiveness of structured planned post discharge support to patients with chronic obstructive pulmonary disease for reducing readmission rates: A systematic review. *Joanna Briggs Institute Database of Systematic Reviews and Implementation Reports*, 2060-2086. Doi:10.11124/JBISRIR-2016-003045

