

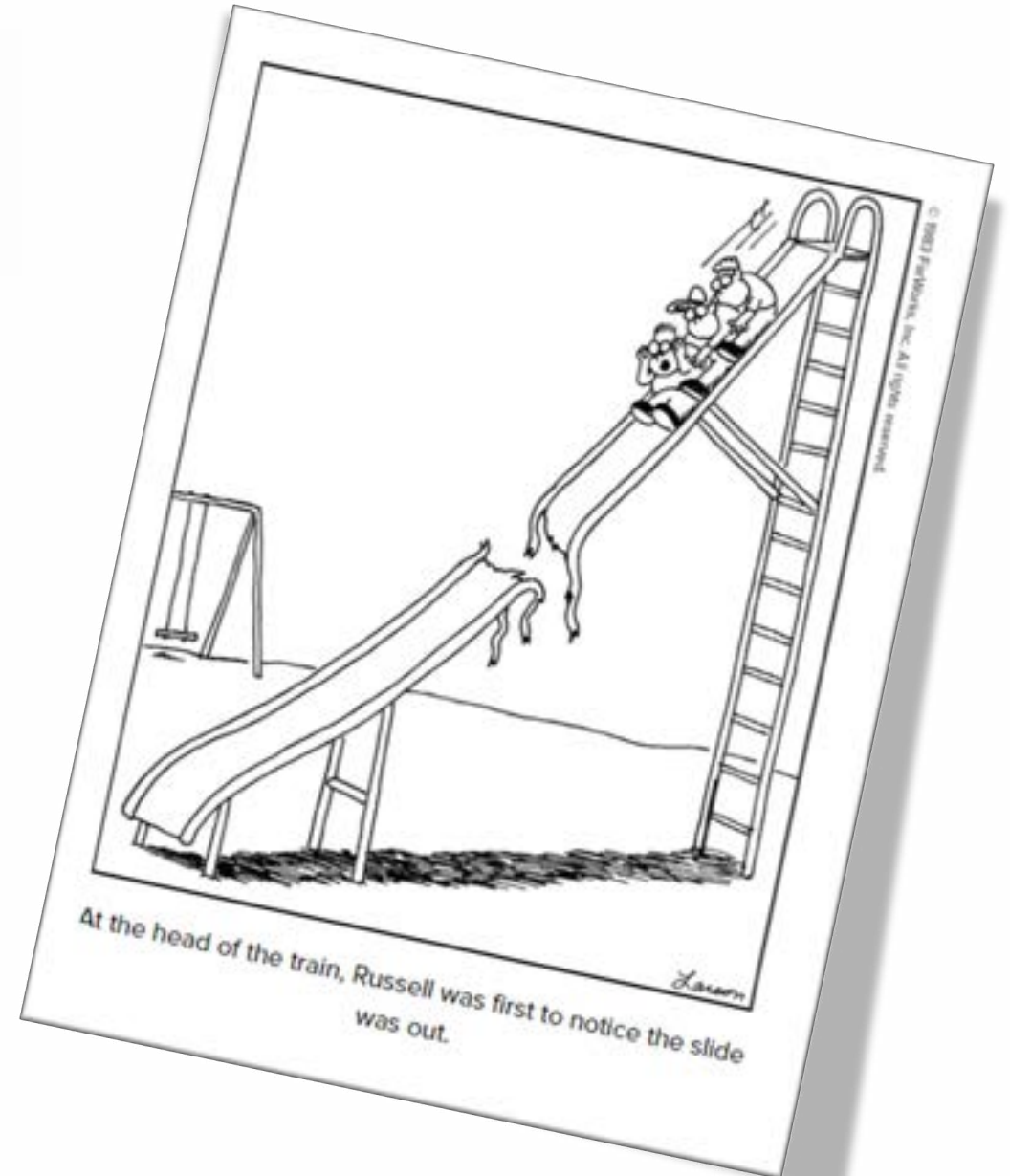


# **IMPROVING HEALTH EQUITY THROUGH PHARMACY INITIATIVES**

**Troy Shirley, PharmD, MBA**  
**System Director of Pharmacy**  
**Bronson Healthcare**

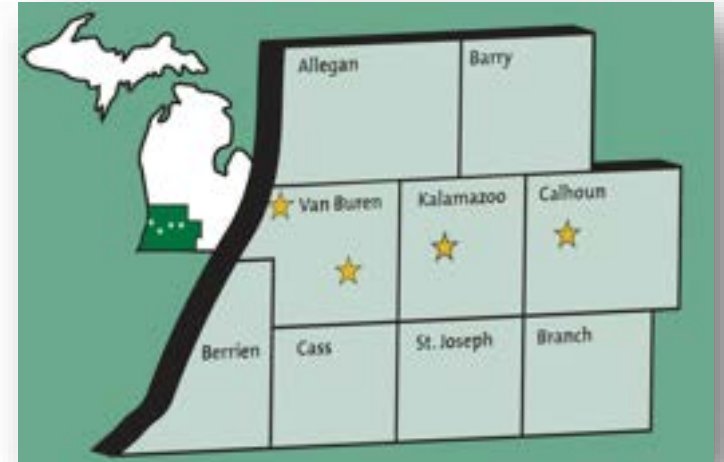
# Goals for today include

- Reviewing the Bronson pharmacy supported discharge initiatives
- Understanding our Bronson outcomes
- Where are we going next



# Bronson Healthcare

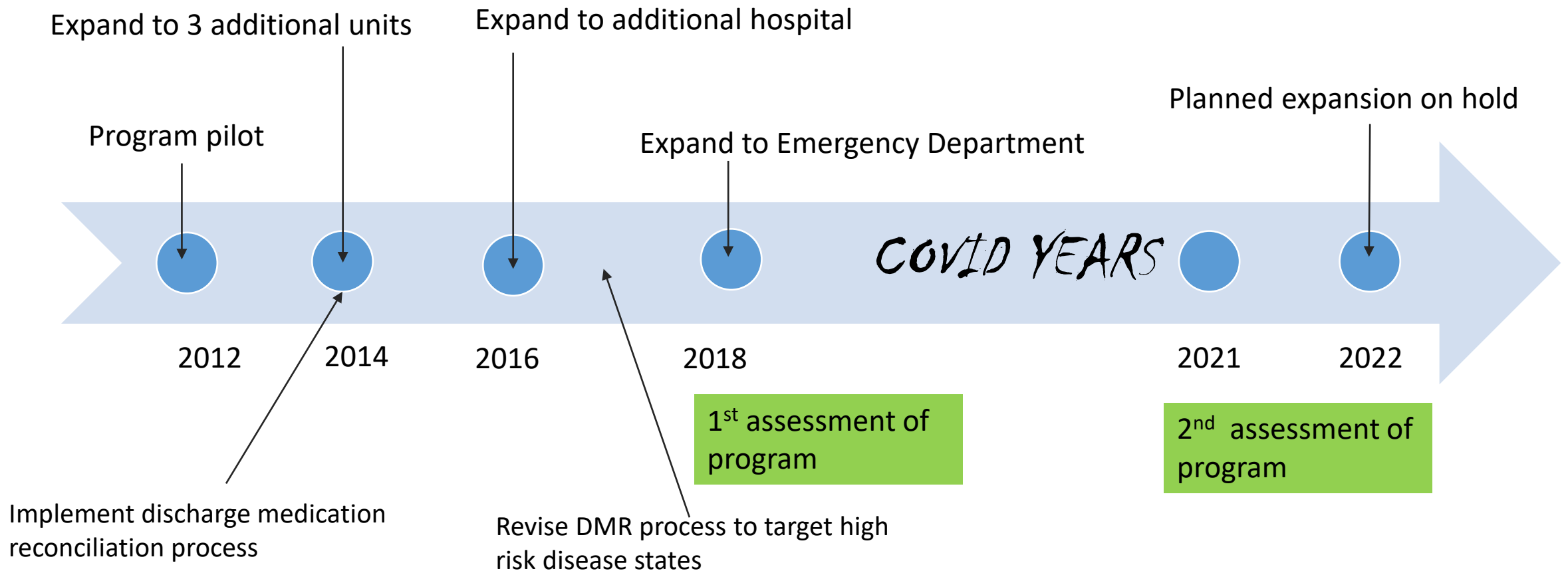
- Regional, not-for-profit health system
- Locally owned and governed
- Serving southwest Michigan since 1900
- 8,600 employees
- 1,500 medical staff
- 4 hospitals: Battle Creek, Kalamazoo, Paw Paw and South Haven
- 796 licensed beds



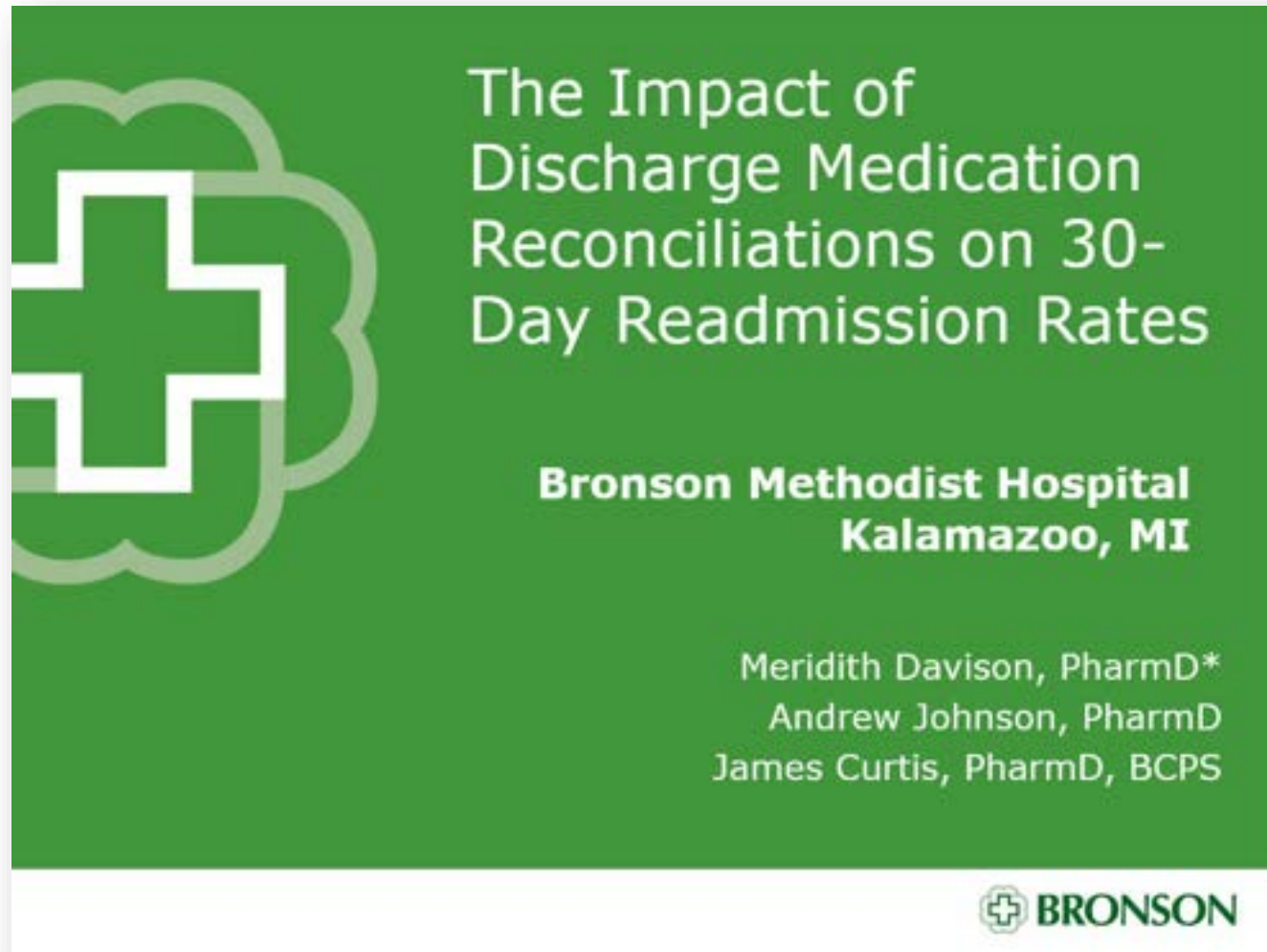
# Discharge Program

- Medication Reconciliation (discharge)
  - Unit based pharmacist reconciles all medications prior to discharge for targeted disease states of: COPD, pneumonia, heart failure, and AMI
- Unit based meds to beds program
  - Retail pharmacist and pharmacy technician collaborate with unit nurses and care managers to identify patients of interest
  - Medications fulfilled by a Bronson Outpatient Pharmacy
  - Medications hand delivered prior to discharge
  - Pharmacist performs medication counseling

# Discharge Program

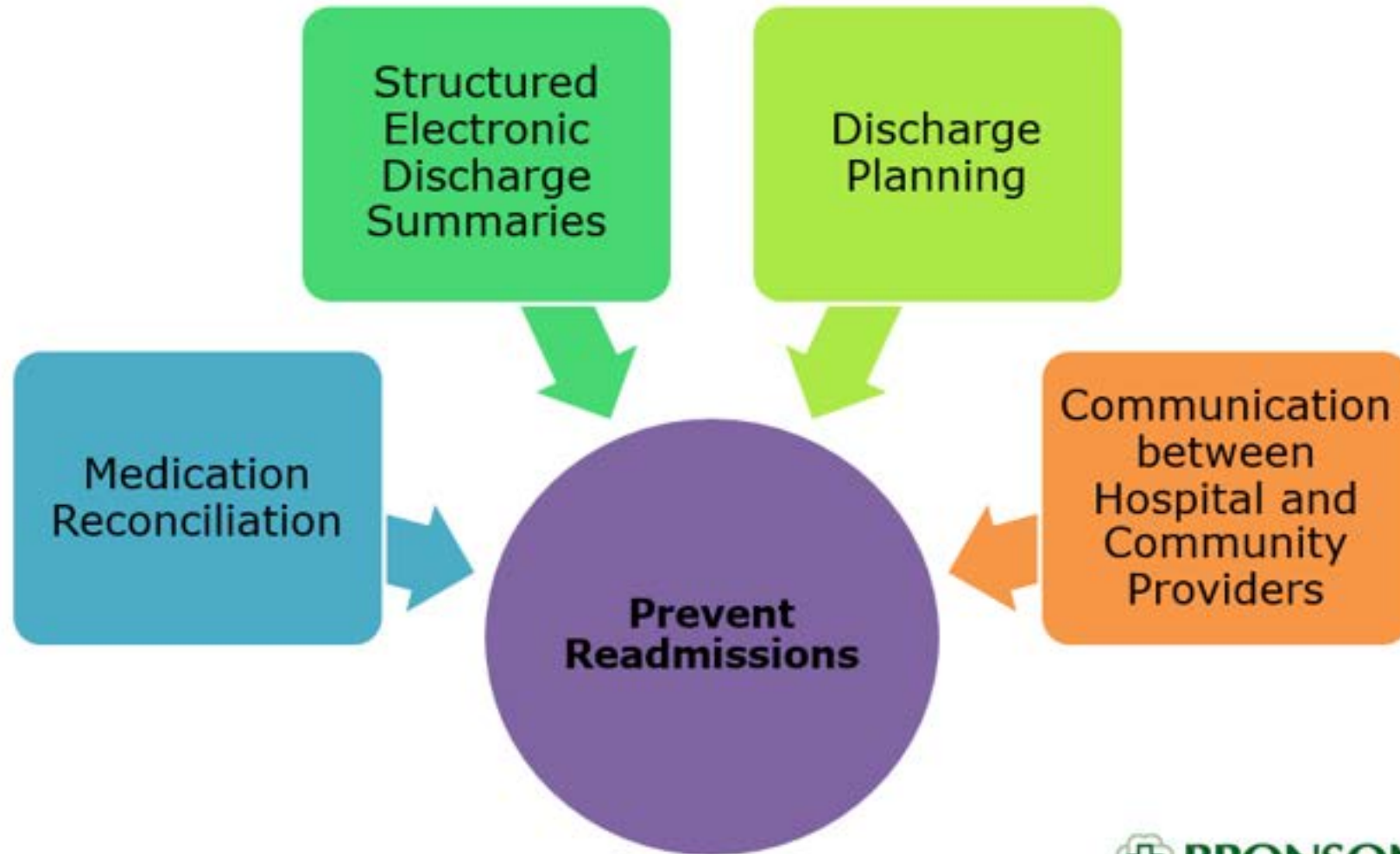


# First assessment of program impact done in 2018





# How to Prevent Readmissions





# Discharge Medication Reconciliation

- 2016
  - Discharge Med Rec Navigator built in Epic
  - Pharmacists completed DMRs when able with high risk patients being top priority
  - High risk patients based on Risk for Readmission (R4R) score
    - EMR calculated risk score for 30-day readmission
    - Points determined from certain “triggers”

- Score from 0-13
  - 0-3 low risk
  - 4-6 medium/ rising risk
  - 7-13 high risk

## R4R Score Triggers

- Past admission within 30-days
- Psychosocial risk
- Advanced Illness Management
  - Palliative care consult
- No primary care provider

## R4R Score Triggers

Medications	Diagnosis
Anticoagulants	Heart failure
Insulin	Pneumonia
Dual antiplatelet therapy	Stroke
Digoxin	Cardiovascular disease
Chronic narcotic use	COPD
	Diabetes
	Chronic kidney disease
	Metabolic encephalopathy
	Delirium

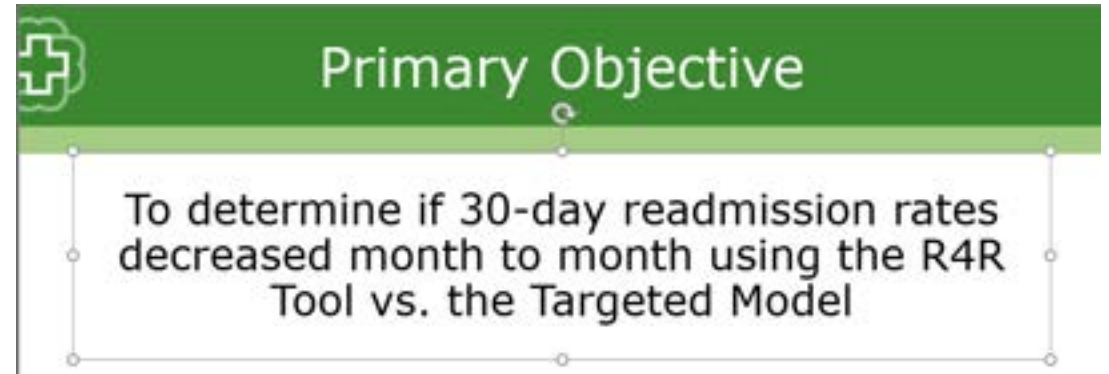


# Discharge Medication Reconciliation

- 2017 - Discharge medication reconciliation program adjusted
  - Initially focused on high-risk patients as identified by risk for readmission (R4R) tool
  - Trigger in EMR identified high-risk patients for the pharmacist to review
  - 6 months of experience identified gap in tool that was not identifying the highest-risk patients (CHF, pneumonia, COPD, stroke)
  - Tool redeveloped to focus on targeted disease states



# THE IMPACT OF DISCHARGE MEDICATION RECONCILIATIONS ON 30-DAY READMISSION RATES

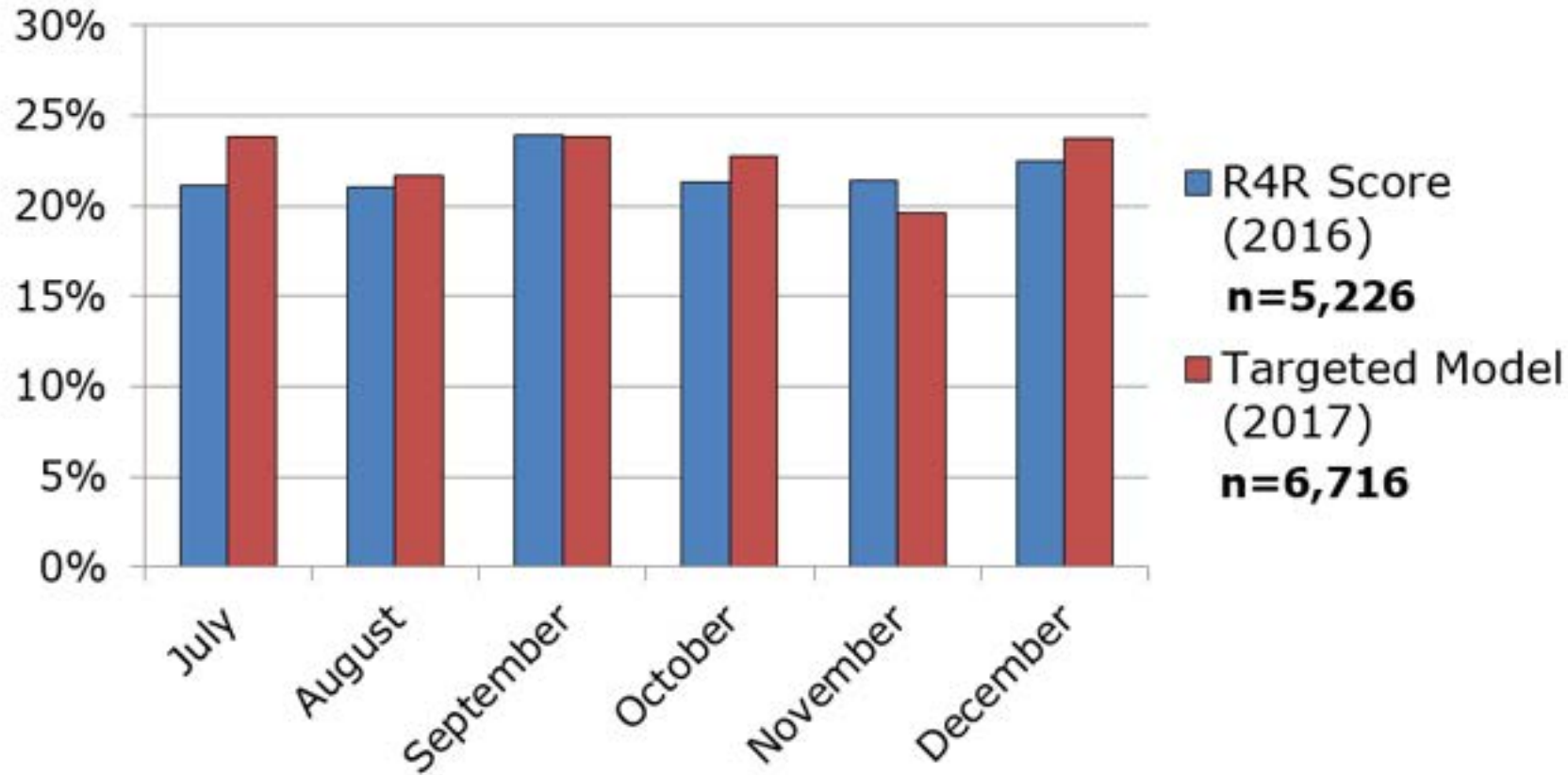


- Retrospective study design
- Data collected from EMR of patients discharged from Bronson Methodist Hospital
- ~20,000 patients in the data set study period
  - 2016 process (R4R only): July – December 2016
  - 2017 process (Targeted + High Risk): July – December 2017



# R4R vs. Targeted Model

## Readmission Rates of All Patients with a DMR

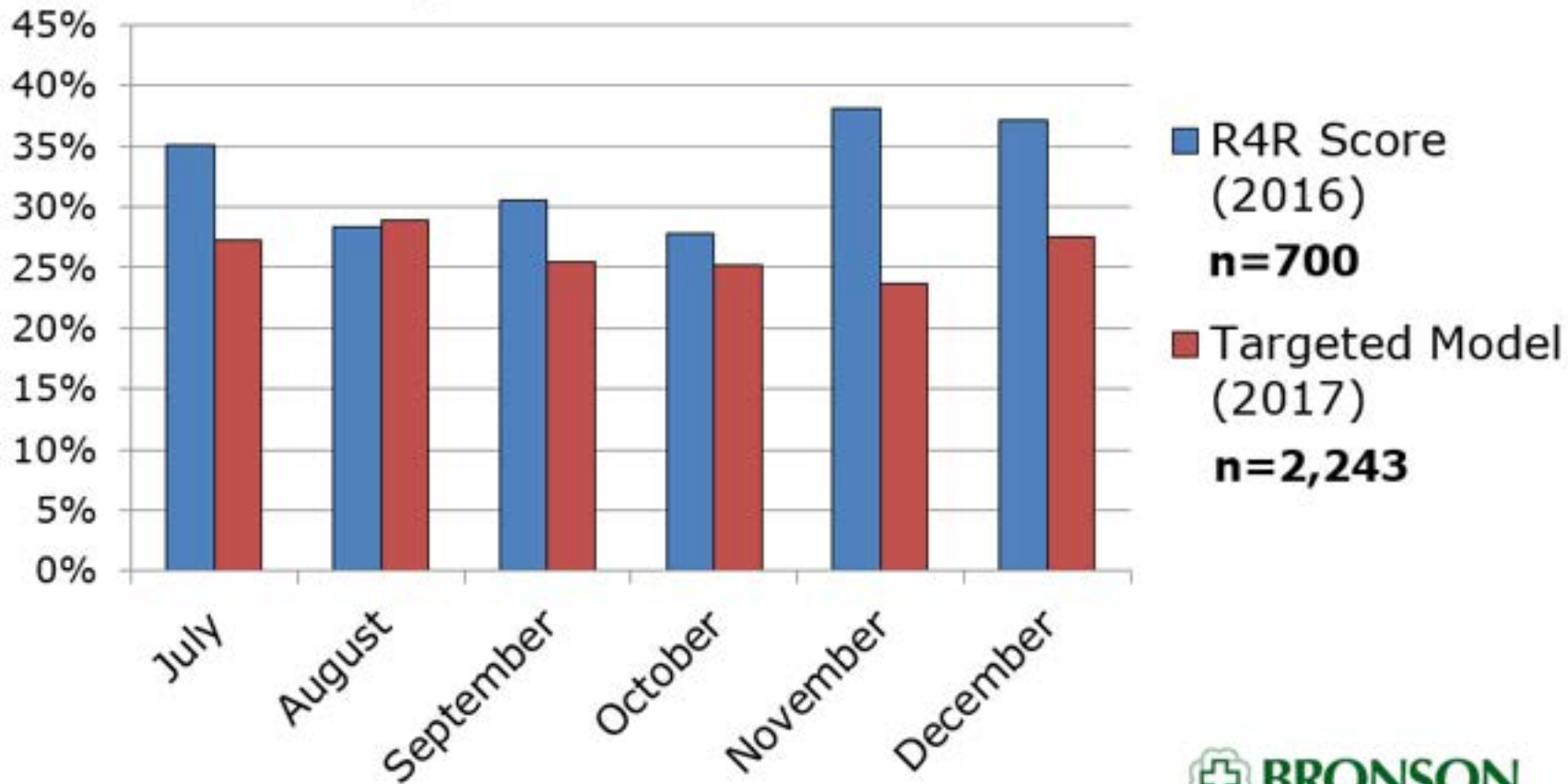


No difference between groups, with a trend to a lower readmission rate using just the R4R tool.



# Primary Outcome

## Readmission Rates of High Risk and Targeted Patients with a DMR

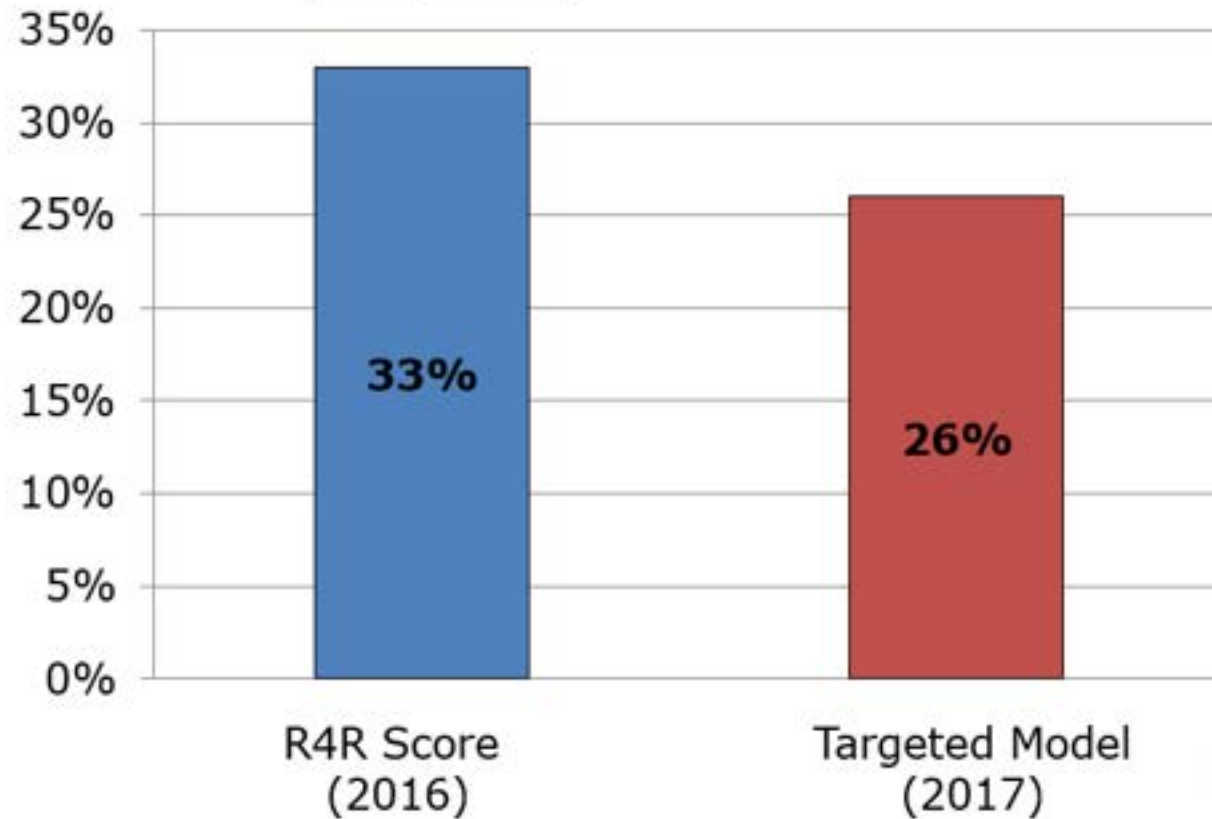


Overall readmission rates are worse when filtered to high risk, but better readmission rates by using the targeted model.



# Primary Outcome

## Readmission Rates of High Risk and Targeted Patients with a DMR



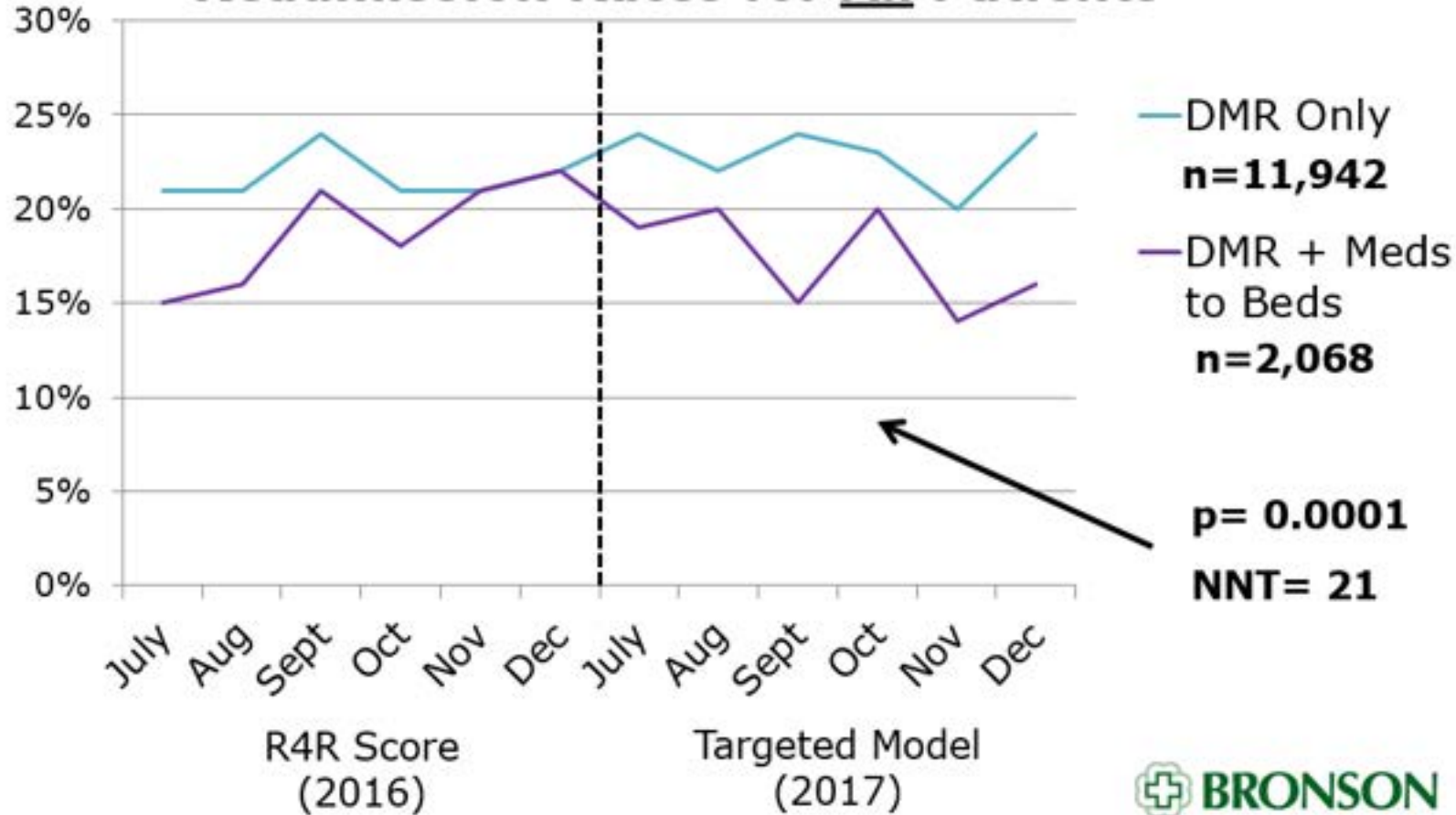
**p= 0.0014**  
**NNT= 16**

Statistically significant difference



# The Meds to Beds Program

## Readmission Rates for All Patients



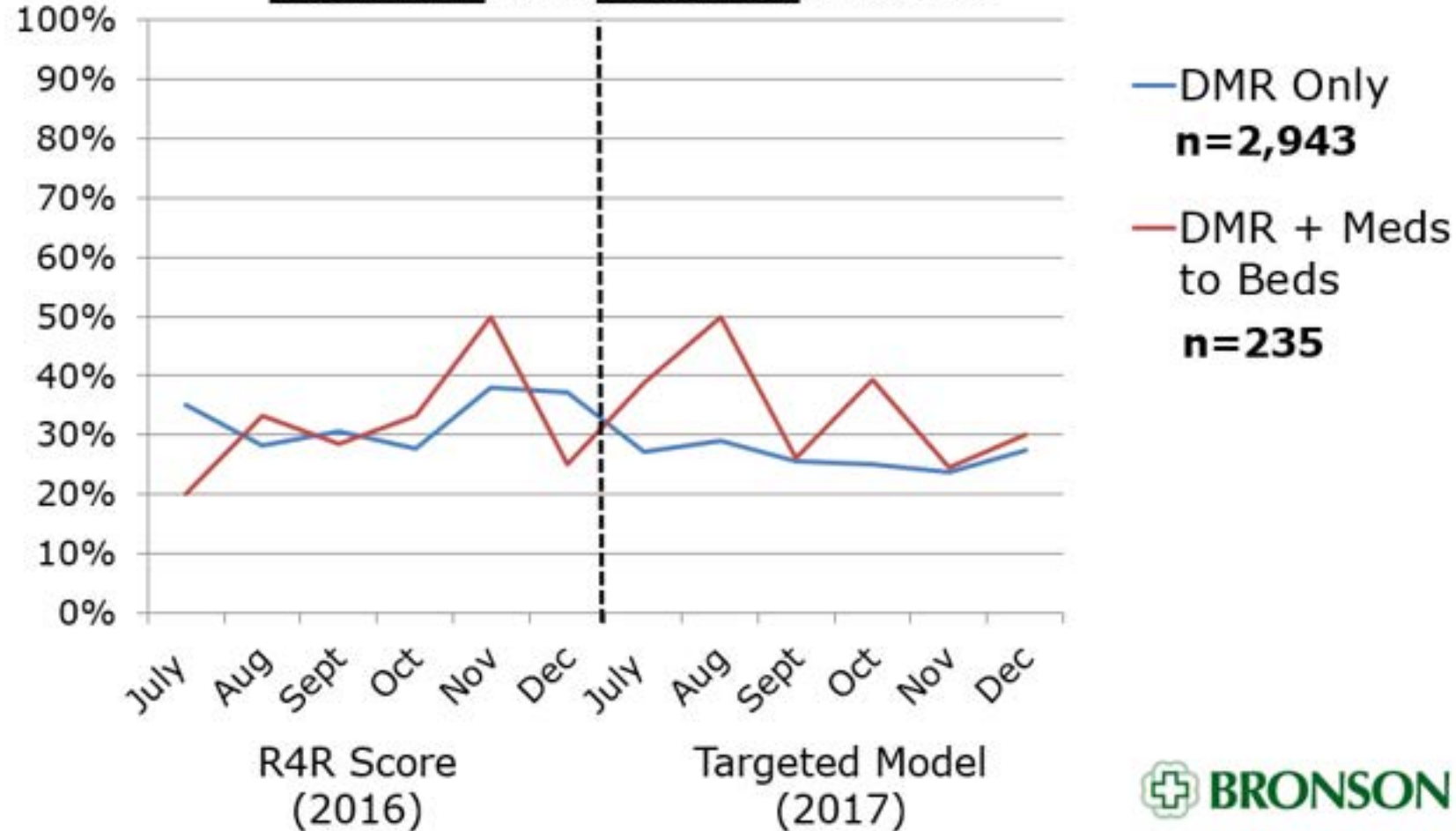
What about those patients that also participated in our discharge prescription program (Meds to Bed)?





# The Meds to Beds Program

## Readmission Rates for High Risk and Targeted Patients



# Conclusion...

- Pharmacist involvement with **medication reconciliation** of high risk and targeted disease state patients **at discharge** provided a 7% **reduction in 30 day readmissions** over high risk patients alone.
- Trend toward additional reduction in readmission rates for all patients participating in the Meds to Beds program, but maybe not for high risk and targeted disease state patients.



# EFFECT OF MEDS TO BEDS PROGRAM ON 30 DAY READMISSIONS

**Bronson Methodist Hospital  
Kalamazoo, MI**

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Andrew Johnson, PharmD

James Curtis, PharmD, BCPS

Acknowledgements: Todd Walroth, PharmD, BCCCP, BCPS, FCCM  
Adam Warner, PharmD

**DISCLOSURE:** the speaker has no  
actual or potential conflict of interest in  
relation to this presentation

## Study design

- Retrospective chart review

## Groups

- Meds to beds vs control

## Study period

- January 1<sup>st</sup> 2018 through December 31<sup>st</sup> 2021

15



## Primary outcome

- Difference in 30 day readmission rate between those who utilized the meds to beds program and the control group

## Secondary outcomes

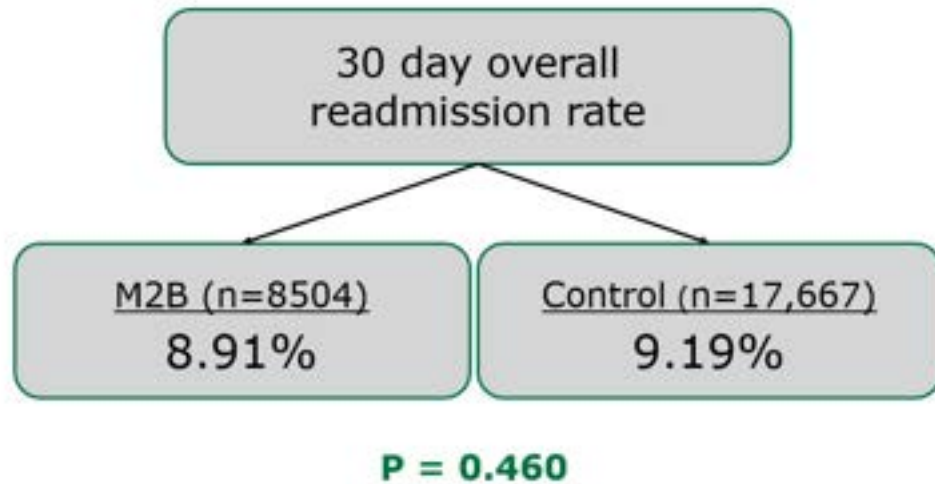
- Readmission rates stratified by care area
- Difference in 30 day readmission for those with targeted disease states who utilized the meds to beds program vs the control group
- Sub-analysis of the high risk for readmission categories



17



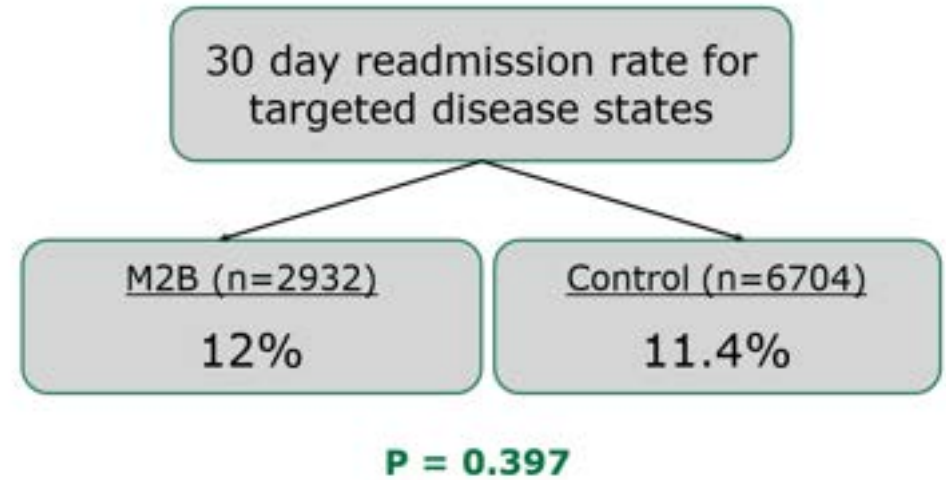
## Primary outcome



20



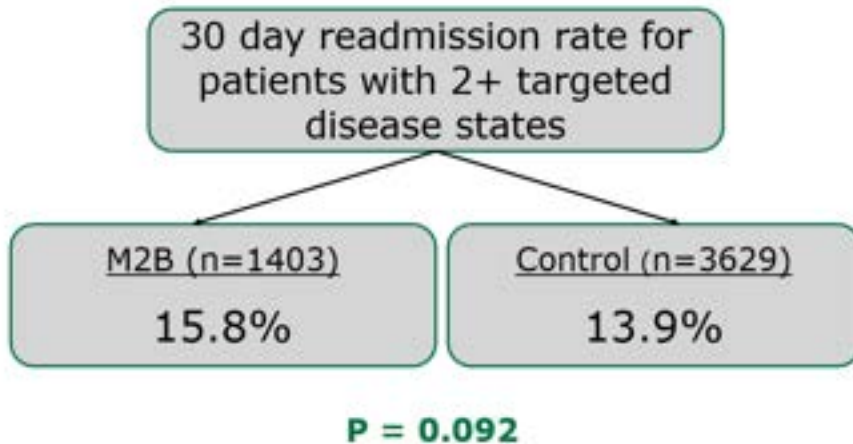
## Secondary outcomes



22



## Post-hoc analysis



- **Key Findings**
  - **Med to Beds** program provided **no impact** on 30 day readmission rates.





# Patient demographics

	M2B (n=8504)	Control (n=17,667)
<b>Age</b> – median (IQR)	61 (49 – 71)	64 (52 – 74)
<b>Gender</b> – Female	4101 (48.2%)	8331 (47.4%)

## Race

White or Caucasian	83.69%	85.19%
Black or African American	12.30%	10.51%
Something else	0.94%	1.01%
Other	0.80%	0.81%
American Indian or Alaska Native	0.80%	0.78%
Other (Hispanic, Latino/a)	0.53%	0.81%
Unknown	0.40%	0.19%
Asian	0.27%	0.23%
Choose not to disclose	0.13%	0.16%
Not Listed	0.13%	0.12%
Native Hawaiian or Other Pacific Islander	0.00%	0.04%
Other Pacific Islander	0.00%	0.08%
Arab	0.00%	0.08%





- Single-center retrospective study
- Patient population: Patients admitted for at least 2 days and discharged from select services
  - Treatment n=790
  - Control n=2326
- Treatment: Pharmacy technician led medication bedside delivery program

Primary outcome	Results	Limitations
Readmission rate between treatment and control group	Treatment: 7.97% Control: 10.09% p=0.136	Single center study Matched by treatment location not diagnosis



- Retrospective study at multiple hospitals across Maryland
- Patient population: Patients admitted to the hospital
  - Treatment n=6,167
  - Control n=28,546
- Treatment: Medication to bedside delivery service

Primary outcome	Results	Limitations
Readmission rate between treatment and control group	Risk ratio for readmission: 1.21 (CI= 0.96 – 1.5)	Possible that treatment group was higher risk for readmission


# Therefore, what do we know to date?

- Pharmacist involvement with discharge med rec impacts 30 day readmissions.
- Ours Meds to Beds results are consistent with recently published literature.
- Ours Meds to Beds program, as constructed, does not seem to have an impact on 30 day readmissions.

# Where do we go from here?

- Pilot project with COPD patients initiated in early 2022
  - Provide rescue medications (5 day supply of prednisone + rescue inhaler) along with comprehensive education at discharge
  - Results pending
- Compare our Bronson Methodist Hospital data (presented today) with Bronson Battle Creek data (pending)
- Critically evaluate the construct of our program:
  - Are we targeting the correct areas of the hospitals?
  - Are we providing the correct medications? Should we provide them in a different way?
  - Should we be targeting different groups of patients?
  - Do we refocus the program entirely?



A photograph of a multi-story hospital building with a brick and glass facade. In the foreground, there is a stone wall with the Bronson logo and the word "BRONSON" in large letters. Below the wall is a garden with many colorful tulips in shades of pink, orange, and white. The sky is overcast.

**Thank you for your attention.**

**Questions?**