It’s quite remarkable to think back to our humble beginnings ...

when a group of ambitious, young clinicians, not being satisfied with the services available to the public, relentlessly lobbied for a new hospital to better meet the needs of the community.
This building is not a private enterprise ... It is a great, public compassion. Here is a living monument to the heart of the people.
MISSION:

TO HEALTH
HOPE
HEALING
AND ADVANCE
- FOR ALL

VISION:

TO BE THE FIRST AND BEST CHOICE FOR CARE
In One Day at Atrium Health

- 37,800 Patient Encounters (1 every 2 seconds)
- 25,000 Physician Visits
- 3,900 ED Visits
- 700 Home Health Visits
- 475 New Primary Care Patients
- 14,000 Virtual Care Encounters
- 91 Babies Delivered
- 635 Surgeries

$5.6 Million
Each day in uncompensated care and other benefits to our community.
Size & Scope

- **69,800+** Teammates | **50** Hospitals
- **44** Urgent Care Locations | **45** EDs | **25** Cancer Care Locations
- **4,650+** Physicians | **17,000+** Nurses

**$11.1 Billion**
Net Operating Revenue

**$2.9 Billion**
In last 5 years

Invested into renovations, new care locations, equipment upgrades and other capital projects

*Includes Joint Venture and Affiliated Enterprises*
FOR ALL
Population Health
Local Problem: Readmissions
Creating Population Visibility
HealthIntent Platform

Aggregate and normalize
Create and apply intelligence
Act and measure

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Identifying Patients

Meet Joe

- Highest ED utilizer in the Atrium Health System
- 1500+ service visits within Atrium Health
- Jan – April 2018 (120 calendar days) = 104 ED visits
- Other 16 days spent inpatient or observation
- ED, Inpatient, and Observation Facility Charges from 2015-2017 = $1,570,900
- YTD 2018 charges = $366,125
Understanding His Story

✓ PTSD
✓ Overwhelming anxiety
✓ Hypochondriasis
✓ Major Depressive Disorder
✓ Alcohol Use Disorder

Joe comes to ED because of an overwhelming fear he will die of numerous medical ailments.

He lives in his car and moves between Atrium Health parking decks to have quick access to the ED.

Joe says that the only thing that helps him feel normal is coming to the ED every day and having a doctor reassure him that he will be okay.
Connecting the Dots for Joe

ED Visits since June 2018

Parc Staffing Scheduled
Housing Obtained
Daily Behavioral Health Therapy
Assigned Primary Care
Daily Community Paramedicine
Cell Phone Food Stamps Medicaid, SSI
And the Results Speak For Themselves

- **85** Total enrollment of patients in 2018
- **28** Graduated Patients (defined as achieving maximum goals of the program and/or obtaining insurance)
- **$1M** Financial Savings in ED Charges
- **55%** Decrease in Hospital and ED Utilization
- **AND** Additional Patients are pending for Enrollment into the Program
Other Keys to Success
Identifying High ED Utilization

Create visibility within the data to identify patients as frequent utilizers.

Define a plan to impact each patient at their level and connect them to appropriate care in order to impact their visit volume.

Understand the underlying issues, including social determinants, that may be affecting this subset of patients to provide them with Population Health Management.

Atrium Health
Outcomes: 20+ Visit High ED Utilizers (2018)

4824 fewer Visits, $16.6M Charge Reduction
Identifying Multi-Visit Patients (MVPs)

Create visibility within the data to identify patients as frequent readmissions (46% of all readmissions)

Define a plan to impact each patient at their level and connect them to appropriate care in order to impact their visit volume

Hold monthly meetings to discuss treatment plans and interventions for those readmitting
Outcomes: Multi-Visit Patients (MVPs) (2019)

- 38% Reduction in Visits
- 27% Reduction in Spend
- Average Length of Stay upon Readmission: 6 Days
- 2,430 Fewer Bed Days
Focusing on Readmissions
Post Discharge Follow Up

Discharge Order Generated from Acute Care Physician

Automated Order for Scheduling

Discharge Follow-Up Appointment Scheduled and Sent to Patient (Text or RoboCall)

Follow-Up Appointment

**Status Report:**
Scheduled Discharge Follow Up with PCP: 70-80%
Arrival Rate within All Risk Bands:
- 81.9% Within 30 Days of Discharge (20% Baseline)
Preventing Readmissions

- Care Management Program
- Community Resource Hub
- Paramedicine
- Virtual Primary Care
- One-on-One RX
- Uber/Lyft Pilot
- Transitions Clinic
- Remote Monitoring
- Complex Chronic Clinic
- Social Isolation Pilot
- Food Pharmacy
- Mobile Health Units
18 percent of Medicare patients discharged from the hospital have a readmission *within 30 days* of discharge, accounting for $15 billion in spending.


- P4P (HRRP)
- VBP (MSPB)
- Insurance contracting
- Benchmarked & Public Quality Metric
- One of most significant drivers of higher cost (payer perspective)
Why Readmissions?

The Right thing to do. Better Care for Our Patients.
A Brief History of Atrium Health’s Readmissions Work

2010
- A CMO and CNE-driven focus to provide better care in the hospital setting
- First year readmissions becomes a QCC goal

2012
- Acute and home care work continues with a siloed approach
- Predixion went live across the system

2013
- Readmissions a priority in Hospital Engagement Network (HEN contract)

2014
- The realization that readmissions is too big and complicated for a single group – a better approach was needed
- Representation across the full continuum met; making progress but not enough

Dec. 2014
- Kick-off event for new readmissions strategy structure with eight workgroups

May 2015
- Expanded strategy team to include behavioral health workgroup

2017
- Cerner readmission risk solution goes live in May 2017
- Incorporation of key disease-specific updates
- Targeted ad hoc subcommittees

2018
- Connection with Oncology service line work
- Established Regional CMO Readmissions and Mortality Strategy Team

A Brief History of Atrium Health’s Readmissions Work
Build and Design
Executive Committee

Role & Responsibility:
- To set objectives for the work
- To provide feedback and direction to Strategy Team
- To provide overall oversight and issues resolution

Strategy Team

Role & Responsibility:
- To provide subject matter expertise and input into development of strategy
- To develop recommended strategic position

ISOC Workgroups & Readmission QSOC

Role & Responsibility:
- To utilize standard methodology—approach to achieving key objectives
- To develop recommended strategic position
- To execute the 2015 work

Oversight Leader

Role & Responsibility:
- To participate on and support workgroup efforts

Atrium Health Readmissions Committee Structure

- Executive Committee
- Strategy Team
- ISOC Workgroups & Readmission QSOC

Home Health Workgroup
SNF Workgroup
Rehab Workgroup
Acute Care Workgroup
Emergency Department Workgroup
Behavioral Health Workgroup

Transitions Workgroup

Access Workgroup

Internal Education/Awareness Workgroup

Corporate Communications
Information & Analytics Services
Care Management
Quality
Team Approach
Transitions Workgroup Example
# Transitions Workgroup Example

## Team Members

<table>
<thead>
<tr>
<th>Role</th>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician Chair</td>
<td>Stephanie Murphy</td>
<td>DO</td>
</tr>
<tr>
<td>Co-Chair</td>
<td>Colleen Hole</td>
<td>RN</td>
</tr>
<tr>
<td>Quality Lead</td>
<td>Danielle Kendall</td>
<td></td>
</tr>
</tbody>
</table>

## Purpose of Workgroup

- **To reduce readmissions by efficiently improving transitions of care and specialty access across the continuum of the patient experience**
- **In Scope:**
  - Any transitions within 30 days of discharge among Home, SNF, Rehab, Hospice and Emergency Department, including Home Health services; this includes multiple transitions among sites within the 30 days
  - Ambulatory specialty care access
  - **NOTE:** 80% of readmission opportunities are patients who are discharged to home/self care and Home Health Care
- **Out of Scope:**
  - Discharged patients < 18 years
  - Behavioral Health access
  - Primary Care follow-up access
Collaboration Prevents ED Visits and Readmissions

- Newly diagnosed heart failure patient referred to home health post-hospital stay
- Home health nurse notified MD of 10lb weight gain and shortness of breath
- MD ordered additional 80mg dose of IV Lasix, not available in local pharmacies.
- Home health reached out to transitions partners paramedicine program
- Paramedics made home visit, administered IV Lasix and handed patient back off to home health for ongoing monitoring
Transition Services Clinic

• Multidisciplinary Approach to Care - Beyond Traditional Medical Office Visits, an Integrated Practice Unit
  1. Discover the root cause for the patient's failure in our current healthcare system
  2. Support/Alleviate those causes
  3. Disease state management and education
  4. Management of complications and subacute needs/medical comorbidities in a pro-active way
  5. Behavioral Health and Palliative Care Collaboration/Support

• Unique Care Delivery Model
  1. In office visits
  2. Virtual Visits
  3. Community Paramedicine Support

• Rooted in Research and Quality
Transition Services Clinic Data Use

• **Use of Big Data at the Inception:**
  • Patient Selection predicated on validated readmission risk factors:
    • > 4 Inpatient encounter in 6 months
    • > 10 chronic medications
    • > 4 ED visits in 6 months
    • > 15 Medical Problems
    • Predixion Risk Score > 0.8
  • Must stay true to patient selection to target resources to appropriate patients and support ROI/accurately measure success

• **Continued Use of Data:**
  • Cerner Risk Score
  • New Patient Populations requiring support
  • Maintenance of impact
Utilization of People

- Medical Provider
- Community Paramedicine
- Pharmacist
- Care Manager RN
- Referral Coordinator
- Palliative Medicine
- Social Worker
- Health Advocacy
- Behavioral Health
Transition Services Clinic Process

- High risk patients receive a referral to transition services either by inpatient provider or automated by embedded tool in EMR
- Patient is met in the hospital by Care Manager RN/Navigator
- Referral visits occur in the clinic or at home within 72 hours of discharge
  - Telemedicine
  - Community Paramedic
- Screening with the PHQ-9 test for behavioral health needs
  - Virtual Behavioral Health Integration availability
- Comprehensive medication review by pharmacist
- Addressing social determinants of health
  - Community resources
  - Address emotional needs
  - Access to support resources: walkers, shower chairs, etc
  - Transportation services: Uber, Lyft, public transportation,
Utilization of Process

- Patient centered focus
- Expanding the boundaries of care
- Integrated approach
- Patient education
- Virtual Visits
- In-office and in-home therapies
Utilization of Health IT

• Transition of Care order form and workflows within the EHR

• Utilization of virtual care

• Predictive Models for Readmission

• HealtheIntent Platform

• Analytics
Transition of Care Referral
Patients at high risk for readmissions are identified by an embedded risk model in Atrium Health’s EHR prior to discharge, after which they are contacted by a patient navigator to set up an appointment with the transition services clinic.
Virtual Care
Data Chart Book Highlights Trends and Opportunity
Self Service Dashboards and Visualization Tools

SNF/Acute dashboard allows for either a SNF or acute facility centric view of readmissions.

COPD dashboard provides a comprehensive view of the COPD readmissions.
Analytics to Drive Improvement

- Impact of TCM Calls on Readmissions
- Impact of Post Hospital Follow Up on Readmissions
- Impact of PALLIATIVE CARE Consults
- Sepsis and Infected Readmissions
- Advanced Illness Management
- ANNUAL Readmissions Analysis and Chart Book
- Medication Therapy Management Pilot
- VIRTUAL HANDOFFS from Acute Care to Skilled Nursing Facilities
- 0-3, 5, and 7 Day Readmissions
- Rehab Readmission Risk Models
- MONDAY Discharges
- Access to Access
- Home Health Telemonitor Program
- Readmissions by Provider Type

Atrium Health
Value Derived
Atrium Health & Metro Acute Care
Unplanned Readmissions O/E
System and National Benchmark Performance

- Uses the 2017 O/E
- ICD-10 Transition October 1, 2015
COPD Readmission Trend – Yearly

Metro COPD Readmission Rate Yearly Trend

HF Readmission Trend – Yearly

Metro HF Readmission Rate Yearly Trend

<table>
<thead>
<tr>
<th>Year</th>
<th>30-Day Readmission Rate</th>
<th>Yearly % Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>15.64%</td>
<td>-</td>
</tr>
<tr>
<td>2015</td>
<td>15.49%</td>
<td>0.96%</td>
</tr>
<tr>
<td>2016</td>
<td>14.86%</td>
<td>4.07%</td>
</tr>
<tr>
<td>2017</td>
<td>13.88%</td>
<td>6.59%</td>
</tr>
<tr>
<td>2018 (Jan – Jul)</td>
<td>13.53%</td>
<td>2.52%</td>
</tr>
</tbody>
</table>

Solid Tumor Readmission O/E

System Wide Solid Tumor Readmission O/E & Yearly % Change

<table>
<thead>
<tr>
<th>Year</th>
<th>Readmission O/E</th>
<th>Yearly % Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>1.01</td>
<td>-</td>
</tr>
<tr>
<td>2017</td>
<td>0.92</td>
<td>8.91%</td>
</tr>
<tr>
<td>2018</td>
<td>0.81</td>
<td>11.96%</td>
</tr>
<tr>
<td>YTD</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Oncology: Malignant Hematology Yearly

System Wide Malignant Hematology Readmission O/E

<table>
<thead>
<tr>
<th>Year</th>
<th>Readmission O/E</th>
<th>Yearly % Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>0.97</td>
<td>-</td>
</tr>
<tr>
<td>2017</td>
<td>0.96</td>
<td>1.03%</td>
</tr>
<tr>
<td>2018</td>
<td>0.88</td>
<td>8.33%</td>
</tr>
</tbody>
</table>

*Numbers are pulled from Premier using Primary and Secondary Diagnosis*
Oncology: Sickle Cell - yearly

System Wide Sickle Cell Readmission O/E & Yearly % Change

<table>
<thead>
<tr>
<th>Year</th>
<th>Readmission O/E</th>
<th>Yearly % Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>1.06</td>
<td>-</td>
</tr>
<tr>
<td>2017</td>
<td>0.90</td>
<td>15.09%</td>
</tr>
<tr>
<td>2018</td>
<td>0.72</td>
<td>20.00%</td>
</tr>
</tbody>
</table>

*Numbers are pulled from Premier using all SCD Diagnosis*
Currently, there have been over 39 patients with SCD who have been followed in our CHG – SCD Transition Clinic. By December 31, 2018, the readmission rate for SCD at Atrium Health Main reduced from 23.7% during 2017 to 15.27%. This represented a 35.5% reduction in 30-day readmission rates, far exceeding our proposed goal of a 20% reduction.
Lessons Learned
Lessons Learned

• Analytically-driven, personalized care delivers value
• Identify the high-risk patients early and begin their transition upon or prior to admission
• Uncover issues that lead to failed outpatient management
• Identify and care for the patient’s subacute clinical needs
• Empower the patient to self-manage their health needs
Success Factors

- Senior leadership
- Physician leadership with operations
- Quality support
- Engagement of the full continuum
- Data and analytics
- Visibility

Focus on the patient
In Summary

• **Local Problem** - close the gaps in care to reduce readmission rates.

• **Design and Implementation** - The goal to reduce readmissions focused on a multifactorial approach which required people, process, integrated technologies, and eventually “big data” for risk stratification and predictive analytics.

• **Healthcare IT** – Order forms and workflows within the EHR, virtual care, predictive models, data and analytics.
How Atrium Health sustains a 4% reduction in readmissions annually

Mackenzie Bean - Thursday, December 13th, 2018 Print | Email

Charlotte, N.C.-based Atrium Health has seen significant improvements in readmission rates since implementing a new population health model, among other strategic initiatives, the hospital told Becker’s via email.

As part of its efforts to reduce readmissions, Atrium Health launched a population health model called Transition Services in 2015. The model offers recently discharged patients access to an entire care team either at Atrium Health’s transition clinic or in their own homes. The care team includes physicians, pharmacists, care manager nurses and social workers who are available to patients in the month after a discharge.

Atrium Health also relies on physician-led work groups, committees and its data analytics department to collaboratively identify the causes of unplanned readmissions and implement targeted interventions.

Since implementing these strategic initiatives, the health system has seen a 4 to 6 percent reduction in readmissions annually. Patients participating in Transition Services also demonstrated a 35 percent reduction in readmission rates compared to those receiving typical post-discharge care.
**KEY TAKEAWAYS**

**Challenges**
- Gaps in care between discharge and ambulatory care appointments resulted in readmissions, especially for medically complex patients.

**Solutions**
- One of Atrium Health’s readmissions work groups lobbied for the implementation of a transition services clinic.
- Patients at high risk for readmission are referred to an in-person or telemedicine clinic appointment, during which they are assessed by a pharmacist and physician and referred to a social worker who helps with social needs.
- Providers and patient navigators utilize an opt-in approach and see patients quickly after discharge to ensure engagement.

**BEST PRACTICE SPOTLIGHT**

Transition Services Clinic Can Address Social Determinants and Reduce Readmissions

**Results**
- There was a 35% reduction in readmissions for patients who engaged with the transition services team.
In Summary - Outcomes

DECREASING
PATIENT READMISSION RATES

12% FEWER

Congestive Heart Failure Patients*

*From 2016 to 2017, the readmission rate for CHF patients at NHRMC dropped from 21.2% to 18.6%.
In Summary

**Outcomes**

Currently, there have been over 39 patients with SCD who have been followed in our CHG – SCD Transition Clinic. By December 31, 2018, the readmission rate for SCD at Atrium Health Main reduced from 23.7% during 2017 to 15.27%. This represented a 35.5% reduction in 30-day readmission rates, far exceeding our proposed goal of a 20% reduction.

---

**Project Goals**

- To achieve a 20% reduction in readmission rates for SCD patients.
- To improve patient satisfaction and outcomes.

**Results and Outcomes**

- Over 39 patients with SCD have been followed in our CHG – SCD Transition Clinic.
- By December 31, 2018, the readmission rate for SCD at Atrium Health Main reduced from 23.7% during 2017 to 15.27%.
- This represented a 35.5% reduction in 30-day readmission rates, far exceeding our proposed goal of a 20% reduction.

**Lessons Learned**

- Collaboration is critical to outcomes of this program. SCD patients need to receive timely care and are supported if healthcare. Thus, improving the management of SCD requires a multi-disciplinary approach.
- A major part of engaging patients to participate in the TC program was to inform them about the support and resources available to them.
- Actions were taken to advocate the services highlighting benefits specific to SCD (phlebotomy appointments, medication refills, smoking cessation, and nutrition counseling).
- SCD management has been the main focus of our program, but patients also received support from primary care or hospitalization post-discharge.

---

**Improvement Process**

- Reduction in hospital readmissions after a prolonged admission (due to higher risk of infection).
- Immediate follow-up referral appointments for all high-risk patients.
- Prevention of further hospitalizations.
- Early intervention for SCD patients.
- Enhanced coordination of care among providers.
- Proactive patient education and prevention strategies.

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**Contact Info**

Thank you to the following individuals for their contributions to the project:

Atrium Health

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**Acknowledgements**

Thank you to the following organizations:

- Atrium Health
- University of North Carolina at Chapel Hill
- Wake Forest University
- North Carolina AHEC
- Other. Thanks to all our partners for their support in this initiative.
Questions
# Roles & Responsibilities

## Workgroup Members

<table>
<thead>
<tr>
<th>Co-Chair: Clinical Ops Leader</th>
<th>Chair: Physician Leader</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Responsible and accountable for implementation of agreed upon interventions</td>
<td>• Leads the group to achieve successful outcomes and attain established goals</td>
</tr>
<tr>
<td>• Assists in determining the feasibility of proposed interventions</td>
<td>• Champions the message to obtain buy-in &amp; engagement from providers and other key leaders</td>
</tr>
<tr>
<td>• Identifies operational resources required to implement interventions</td>
<td>• Attends team meetings and actively engages in sub-committee work</td>
</tr>
<tr>
<td>• Attends team meetings and actively engages in sub-committee work</td>
<td>• Ensures all team members have input into efforts</td>
</tr>
<tr>
<td>• Seeks opportunities for synergy and collaboration with existing work</td>
<td>• Seeks opportunities for synergy and collaboration with existing work</td>
</tr>
</tbody>
</table>
Roles & Responsibilities

Workgroup Members

• **Quality Leader**
  - Identifies opportunities and best practices in assigned area
  - Incorporates identified opportunities into improvement work and leverages quality resources to support interventions
  - Gathers and analyzes pertinent data
  - Serves as key liaison between readmission sub-committees and other related initiatives across CHS
  - Attends team meetings and actively engages in sub-committee work
  - Seeks opportunities for synergy and collaboration with existing work
  - Provides team facilitation (*may delegate facilitation support to a member of his/her team*)

• **Team Member**
  - Attends team meetings and actively engages in sub-committee work
  - Provides thought leadership as appropriate for his/her area of expertise
  - Champions the message to obtain buy-in and gain support from peers
  - As appropriate, provides support for implementation of interventions
Roles & Responsibilities

Workgroup Members

Executive Committee Member

• Assigned as Executive Sponsor to a workgroup
• Hold a quick, virtual, touch base call or meeting 2x/month with assigned workgroup
• To serve as the integration/coordination of clinical and operational input to strategic development and execution for CHS Readmissions work
• To serve as a repository of data and activity around readmissions work across the System
• To understand the variability and create standardization
• To set objectives for the 2015 and 2016 work
• To provide feedback and direction to the Strategy Team
• To provide overall oversight and issues resolution to ensure successful outcomes
• To provide guidance, education and communication to CHS leaders regarding Readmissions strategies
• To advocate for appropriate resources and ensure the work remains a priority focus
• To focus the organized work in the Metro region and share learnings as rapidly as possible and promulgate single unified enterprise thinking throughout the CHS clinical enterprise
Transition of Care Workflow
AIMING TO IMPROVE READMISIONS THROUGH INTEGRATED HOSPITAL TRANSITIONS (AIGHT): A PRAGMATIC RANDOMIZED CONTROLLED TRIAL

Andrew David McWilliams, MD, MPH1,2,3 | Jason Roberge, PhD, MPH4 | Whitney Rossman, MS5 | Charity G Moore, PhD, MSPhd4 | Stephanie Murphy, DO1
Stephanie McCall1 | Ryan Anthony Brown, MD1 | Shannon Carpenter1 | Scott Rissmiller, MD1 | Scott Furney, MD4
1Carolina’s Hospitalist Group, Atrium Health | 2Department Internal Medicine, Atrium Health | 3Center for Outcomes Research and Evaluation, Atrium Health | 4University of Pittsburgh

BACKGROUND

- Inpatient and observation readmission rates remain high and largely unchanged.
- Hospitals have little, robust evidence to guide the selection of interventions effective at reducing 30-day readmissions in real-world settings.
- Most published studies in readmissions are limited by selecting engaged populations, being conducted only in academic settings, or using non-randomized settings.
- Our local healthcare system incorporated the most recent recommendations for preventing readmissions into a comprehensive program called Transition Services (TS) (Table 1).

STUDY OBJECTIVES:

To answer 3 questions important to hospital medicine providers and health system leaders:

1. Can a hospital move a high-risk population’s readmission metric by referring patients to a comprehensive transition clinic?
2. Have we reached a ‘floor’ in readmission rates, despite resource intensive interventions?
3. In a population free from selection bias, what is the actual rate of participation in a transitions intervention?

METHODS

- Non-blinded, pragmatic randomized controlled trial (Clinicaltrials.gov: NCT03535320) conducted at two hospitals in North Carolina.
- 1,874 adult patients, under the care of a hospitalist, at high-risk for readmissions, and discharged to home.
- Random allocation of referral to a Transition Services (TS) program (n=1,328) or usual care (n=546) (Table 2).
- Primary outcome: 30-day, unspun, inpatient or observation readmission rate.
- Secondary outcomes: 30-day readmission rates for subgroups with congestive heart failure, sepsis, and pneumonia.
- TS arm on study to use ICU stay or discharge (Table 1).
- The primary analysis followed the intention-to-treat (ITT) principle for all patients discharged to home (Figure 1).
- We performed the per-protocol and Complier Average Causal Effects (CACE) analyses to evaluate the effect of TS program participation.

REFERENCES:


RESULTS

- Intention to Treat Analysis (Table 3): 30-day readmission rates were 15.9% in the TS group and 16.3% in the usual care group (IRR 0.93, 95% CI [0.75 to 1.15], P = 0.52).
- TS patients with a diagnosis of sepsis had lower 30-day readmission rates (IRR 0.69, 95% CI [0.24 to 0.79], P = 0.02).
- 30-day readmission rates were not different for those with congestive heart failure or pneumonia.
- Patients who were referred to TS and readmitted had less ICU admissions 15.9% vs. 26.5% (IRR 0.59, 95% CI [0.39 to 0.91], P = 0.02).
- Among those referred to TS, 25.2% participated in the program.

Per Protocol Analysis:

- 30-day readmission rates were 10.5% in those participating (TS arm) versus 15.9% for usual care (n=1,328, 95% CI 0.54 to 0.71, P = 0.03).

CACE Analysis:

- A non-significant, absolute 6.8% reduction in 30-day re-admission rates in the TS arm compared to usual care (44.0%; 95% CI, -17.0% to 9.1%; p = 0.15).

CONCLUSIONS

- Referral of a high-risk patient population to a transitions program did not lead to reductions in 30-day readmissions, but participation rates were low (25%).
- Per-specified subgroup analyses showed decreased readmission rates for patients with sepsis and reduced ICU stays for the overall readmitted population.
- Per protocol analysis demonstrated a significant reduction in 30-day readmissions for those who participated in TS but not CACE analysis.
- Disparities in outcomes in the ITT vs. per protocol vs. CACE analyses highlight the need for population health interventions to be subjected to rigorous, pragmatic evaluation.
- Results provide RCT evidence highlighting the difficulty of moving a population-based metric within a complex healthcare environment.
- Improved patient outcomes are possible with transition programs, but additional innovative approaches are needed to achieve desired changes in population metrics.

CONTACT INFO:

Andrew McWilliams, MD, MPH
Atrium Health

ACKNOWLEDGMENTS:

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