Appropriate Preoperative Screening in Low-Risk Surgeries

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Henry Ford Health, Detroit, Michigan

BACKGROUND

Research shows that routine preoperative testing in elective low risk surgeries:

- Costs the U.S. an estimated $85.2 million annually.
- May add to patient's personal financial burden.
- Does not improve patient outcomes.
- Clinically insignificant results can lead to delays in needed care prolonging pain and suffering and additional decompensation.

Clinically insignificant testing can also lead to a cascade of additional unnecessary testing. (1)

AIM/PURPOSE

PROBLEM STATEMENT:

- Unnecessary testing leads to increased cost and potential delays in care with no ROI (Return on Investment).

GOAL:

- Decrease unnecessary preoperative testing rates in patients undergoing any of 3 elective low risk surgeries (lap cholecystectomy, minor hernia repair, and breast lumpectomy) by 20% by the end of 2023.

PLANNING

JANUARY 2023:

- Begin a pilot study of 3 elective low risk surgeries to gain insight into our practices at HFH. This will determine our baseline.
- Review and analyze quarterly data from MVC (Michigan Value Collaborative)
- Develop a multidisciplinary team to compare current practice to best practice.
- Develop a more robust policy/protocol to determine who does/does not require preoperative testing.
- Create Decisions aids to assist in determining risk score and appropriateness.
- Update Epic to reflect new protocols
- Educate & roll-out new protocols
- Continue data collection and PDCA cycles

IMPLEMENTATION

- A PAT (Pre-Anesthesia Testing) Risk Assessment Questionnaire and an updated Lab Testing Grid were developed and implemented 6/28/2023.
- The PAT Standing Order set and the Nursing Implemented Standing Orders Policy were revised to reflect the new clinical decision support (CDS) tools.
- New protocol was communicated to surgeons and the PAT nursing staff in April and July.
- Questionnaire and Order Sets were updated in EMR (electronic medical record) by the Epic orders team.

PROJECT BASELINE RATE

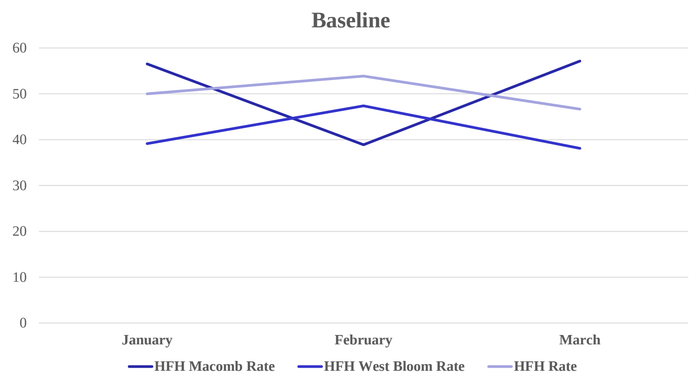


Figure 1. Baseline Rate

PROGRESS FOLLOWING INTERVENTION

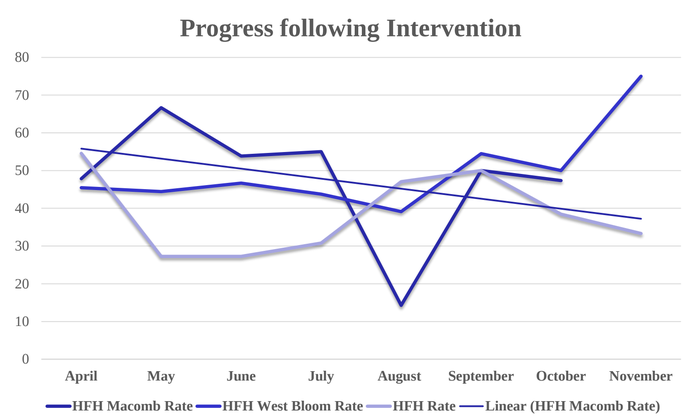


Figure 2. Progress following project intervention.

BARRIERS

- Private physicians who order their own labs.
- Patients who follow with other health systems.
- Labs ordered by other providers not related to surgery.
- Oncology patients undergoing chemotherapy require ongoing lab work.
- The amount and timing of approvals to get EMR updated.
- Lack of awareness in the community regarding existing guidelines and best practices.

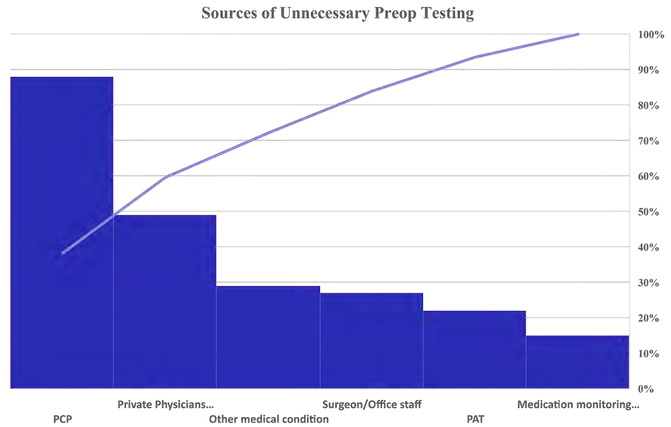


Figure 3. Pareto Chart demonstrating sources of unnecessary preop testing

NEXT STEPS

- Continue PDCA cycles throughout 2024 with focus on what we can control.
- Share results of 2023 work at multidisciplinary meeting and with senior leadership.
- Provide timely feedback to individuals regarding orders outside of protocol.
- Assess triggers for implementation of pre-operative clearance by providers.
- Communicate new protocol to Primary Care Physician groups.

REFERENCES

1. MVC (Michigan Value Collaborative) workgroup presentation. Hari Nathan, MD, PhD Director, Michigan Value Collaborative March 2023

Background and Context

Major bleed constitutes procedures with a decrease from NCDR 6030 pre-procedure hemoglobin to NCDR# 8505, post-procedure hemoglobin is ≥ 5gm/dl

NCDR definition:
6030 Target Value: The last value within 30 days prior to the first procedure in this admission
8505 Target Value: The value between current procedure and 72 hours after current procedure

2022 Baseline Data for Macomb Major Bleeding is 1.67%

Purpose

Achieve goal of decreasing the number of major bleeds episodes to ≤0.85% in all PCI cases

Research Questions

Common Causation Factors:

- LV assisted devices i.e. Impella and Balloon Pump
- Post- procedure goin education for Critical Care Staff
    1. Education of the proper insertion to IR fellows and Intervention Cardiologists
    2. Education on proper post-op groin management
- Impella device required a priming solution that was heparin based
- Medication appropriateness-Ensuring Proper dosing of anticoagulants

Method & Analyses

Impella pump required an IV solution for priming. Impella manufacturer did research analysis on types of compatible fluids without anticoagulants to test for availability to use in their equipment. It was determined that 0.9 with heparin solution could be replaced with a bicarbonate solution instead of an anticoagulant solution to aid in the reduction of patient exposure to additional anticoagulants.

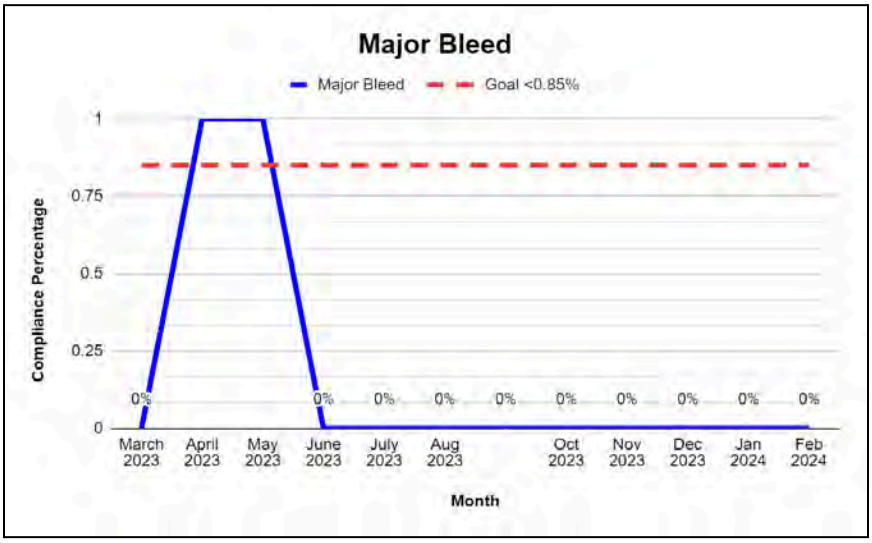
Impella manufacturer representative came to site to provide education to staff on proper insertion techniques

Adapted advanced technologies device, Early Bird device, to monitor any cases of bleeding and alert the staff.The Early Bird device is a bleed monitoring system attached at the interventional site that alerts staff to any bleeding event at the site. Additional education provided to Critical Staff that would be using this new device.

Cases that were considered to be a major bleed were sent to a pharmacists for review that proper anticoagulant dosing was ordered correctly and administration followed hospital protocol.

Findings

Implementation of methods described above resulted in an initial reduction of baseline major bleeding episodes from 1.67% to just 0.2%. Ultimately, implementation of reduction methods led to an elimination of major bleed episodes in PCI cases.



Conclusions

Implementation of methods to reduce the amount of anticoagulation in PCI patients contributed greatly to the reduction/elimination of major bleeds in PCI patients.Equally, insertion education on the Impella device and post-operative groin management significantly impacted the reduction and subsequent elimination of major bleedings in PCI patients. Lastly, incorporating pharmacists to conduct medication appropriateness case reviews, in patients with major bleeds, contributed to overall understanding of bleed contributors.This knowledge and shared learnings also helped to eliminate major bleeds in our patients.

Extending MVC's Membership Reach:
Incorporating Ambulatory Surgery Centers

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Michigan Value Collaborative

MVC ASC Engagement

Current State

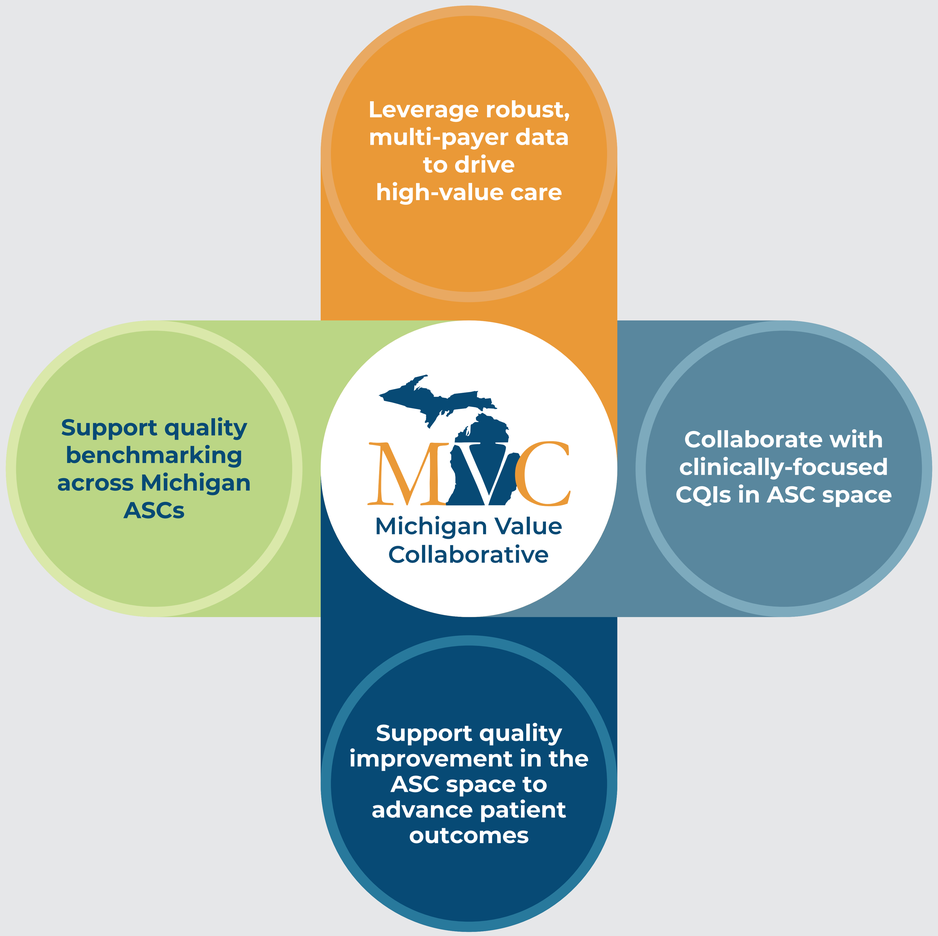
- Developing alignment and shared goals with Michigan Ambulatory Surgery Association Board
- Exploring shared goals with clinical CQIs: MARCQI, MSSIC, MUSIC, BMC2, MSQC and MBSC
- Listening tour & site visits with MASA-participating ASCs

Future State

1. Continue to build on MVC team's understanding of ASC operations and relationship with key sites
2. Identify report measures and characteristics of interest to MASA sites for future development after proof-of-concept exercises
3. Continue to network with MASA sites and gain exposure to QI topics of interest
4. Identify opportunities for alignment with clinical CQIs interested in ASC space

MVC-ASC Value Proposition

Where do we see opportunity to impact the value and quality of care at ASCs?



Ask to MVC Members:

Are you engaged with ASCs or know specific surgeons operating in this space who we could speak with?

If yes, contact the MVC Coordinating Center at Michigan-Value-Collaborative@med.umich.edu

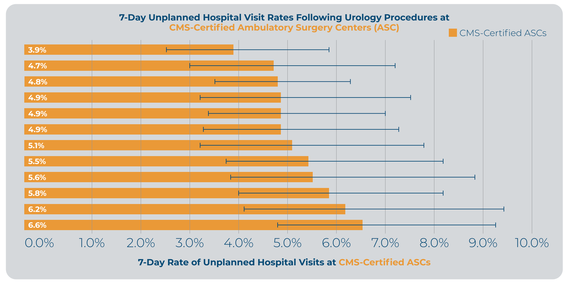
MVC ASC Analytics

Current State

- Focusing on 110+ CMS-certified ASCs in Michigan
- Defining and validating ASC encounters
- Replicating CMS Quality Measures
- Understanding ASC billing nuances by payer

Future State

- Expand to develop multi-payer analytic strategy to support ASC quality improvement efforts
- Build, test, and validate ASC-episode data in MVC claims to support a wide variety of future reporting platforms



Above, the CMS quality data reflects significant variations in unplanned hospital visit rates following urology procedures. **Please note, MVC data was not used to calculate these rates.**

GLP1 Medication Initiation

Mary Pilarski RN, BSN, CDCES

Michigan Collaborative for Type 2 Diabetes

Background

Improving quality of pharmaceutical use as a part of Type 2 Diabetes Management.

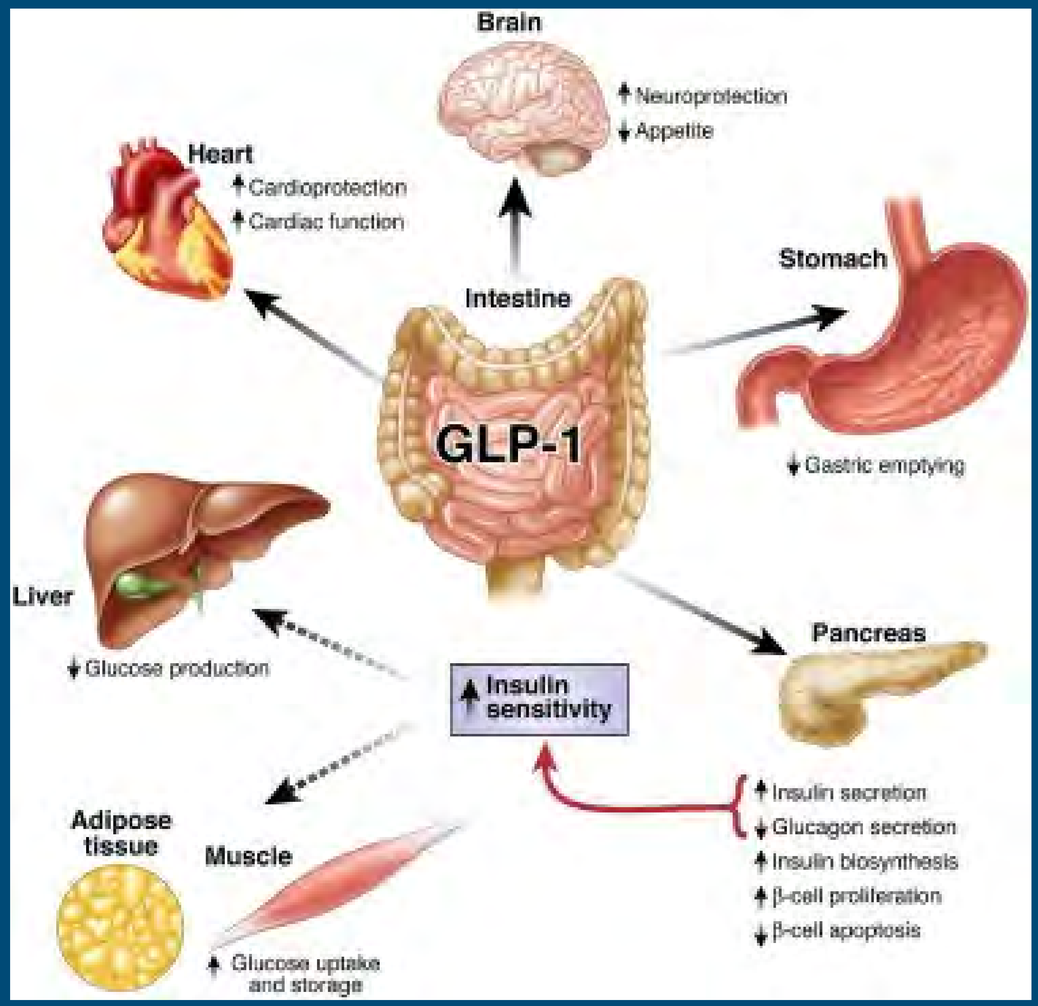
Incretins are a drug class newly recognized for not only promoting improvement of blood glucose in people with Type 2 Diabetes, but also has demonstrated benefits in reducing adverse cardiac and renal complications.

Though our practices' populations of patients with diabetes are large, a significant number of the patients have very low HgbA1c's due to adequate current management. We felt focusing on patients with HgbA1c's greater than 7% would give us a target population of patients with whom we could accurately work and for whom we could affect positive and meaningful change.

Ensuring patients with **newly prescribed GLP1** medications not only fill their prescription but adhere to the prescribing regimen.

Utilize a newly developed **tracking tool** that monitors adherence and assist practice units in monitoring these patients during their treatment.

Addressing **SDoH challenges** early and monitoring for any **adverse side effects**.



Objectives

Increase prescribing of GLP-1RA from 32% to 36% for patients with an A1c greater than 7%, improving diabetes management and reducing the risks for long-term complications.

Process

- Introduced to providers and staff. Determined best practice for identifying patients and track new prescriptions.
- Developed tracking tool.
- Developed educational materials.
- Identified SDoH barriers and addressed education and financial challenges.
- Evaluated and addressed unpleasant side effects, obtained samples and demo tools from drug reps.
- Patient outreach for follow up.
- Provider outreach to evaluate efficacy of tracking device

Results

Overall results are pending, however, the tracking tool and follow up have been successful in ensuring patients with the greatest risk were addressed and followed consistently.

Lessons Learned

While the tracking tool has been well received it revealed a need for technology support for long term success.

Guiding the Way: Navigating the Total Joint Replacement Journey

A Continuum of Care Approach with Orthopedic Nurse Navigation

Ashlee Knoll, BSN, RN
Melissa Burleson, BSN, RN, CRRN, ONC

Ascension St. Mary's Hospital

MARCQI MICHIGAN ARTHROPLASTY REGISTRY COLLABORATIVE QUALITY INITIATIVE

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Michigan Value Collaborative

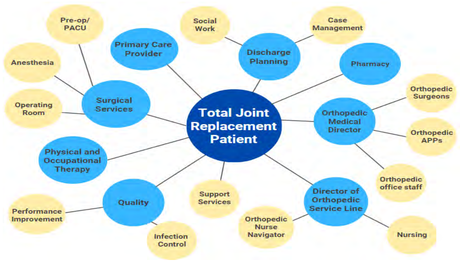
BACKGROUND

- **Michigan Value Collaborative**
  - **Condition Selection: Joint Replacement Hip and Knee**
  - **Program Year 2022 & 2023 and 2024 & 2025**
- **Michigan Arthroplasty Registry Collaborative Quality Initiative**
  - **Participating since January 2021**
  - **Engage in quality improvement activities for hip and knee joint replacement surgery procedures**
- **Joint Commission- Advanced Total Hip/Knee Certification**
  - **Certification obtained as Advanced Total Hip/Knee Replacement in May 2023**

PURPOSE

To provide a comprehensive preoperative optimization process for the patient to have surgery with the confidence and education necessary to be successful post procedure. Focusing on care optimization; this will drive positive patient outcomes and assist with reducing readmissions and other postoperative complications.

Team/Structure



Root Cause Analysis/Implementation Plan

Communication	Education	Program Structure
• Improve call back process post discharge • Develop a reference tool for follow up questions/issues • Develop streamlined communication process involving nurse navigator	• Revamp pre-op and discharge instructions • Improve the nursing orientation process (ortho specific) • Create a checklist for nurses (badge buddy reminders)	• Hire a nurse navigator • Partner with MARCQI • Strengthen partnership with home health care • Restructure ortho committee meetings

FINDINGS

The MVC Component of the BCBSM Pay-for-Performance Program
Program Year 2023 Final Scorecard
Ascension St. Marys Hospital

Scoring Summary		
Episode Payment Points	Bonus Points	Total Points
9	2	**10**

Scoring Details

Selected Condition	Hospital Baseline (2020)	Performance Payment (2022)	Improvement Z-Score	Improvement Points	Achievement Z-Score	Achievement Points	Quality Threshold Met	Bonus Point	Points Per Condition
Joint Replacement (Hip and Knee)	$21,141	$17,746	0.808	5	0.070	2	Yes	1	5

Year-Over-Year Improvement

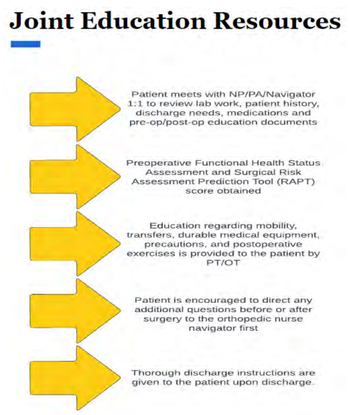
Selected Condition	Hospital Baseline (2020)	Performance Payment (2022)	Improvement Z-Score	1 Point (Z-Score: 0)	2 Points (Z-Score: 0.05)	3 Points (Z-Score: 0.10)	4 Points (Z-Score: 0.15)	5 Points (Z-Score: 0.20)	Improvement Points
Joint Replacement (Hip and Knee)	$21,141	$17,746	0.808	$21,141	$20,931	$20,721	$20,511	$20,301	5

Achievement Ranking Targets

Selected Condition	Cohort Baseline (2020)	Performance Payment (2022)	Achievement Z-Score	1 Point (Z-Score: 0)	2 Points (Z-Score: 0.05)	3 Points (Z-Score: 0.10)	4 Points (Z-Score: 0.15)	5 Points (Z-Score: 0.20)	Achievement Points
Joint Replacement (Hip and Knee)	$18,043	$17,746	0.070	$18,043	$17,833	$17,623	$17,413	$17,203	2

- **MVC -** Maximum points earned for Joint Replacement (Hip and Knee)
- **MARCQI -** Overall **reduction** in 30/90 Day **ED Visits**
- **MARCQI -** Overall **reduction** in 30/90 Day **Readmissions**
- **TJC Advanced Hip/Knee - 100% Compliance** for patients discharged home

MARCQI Quality Improvement Scorecard - Total Knee				
Site	90 Day ED Visit	30 Day ED Visit	90 Day Readmit or Unplanned Admit	30 Day Readmit or Unplanned Admit
St Marys - Saginaw **Baseline** Oct 2020- Sept 2021	**22.2%**	**17.5%**	**15.9%**	**14.3%**
St Marys - Saginaw **Post Intervention** Jul 2022- Jun 2023	**14.0%**	**9.1%**	**6.9%**	**6.3%**



CONCLUSIONS

- **What Worked?**
  - Interventions/Structure focused on patient's continuum of care resulted in positive patient outcomes
  - Implementation of Orthopedic Nurse Navigator Role
    - Stronger communication with the patient
  - Preoperative optimization
    - Education appointment
    - Lab value review
    - PT/OT
  - Comprehensive Discharge Process
- **How are we sustaining?**
  - Continue to build relationships with patients
  - Monitor complications and evaluate trends
  - Review data at orthopedic sub section and orthopedic section meetings
- **Next Steps?**
  - Implement interventions when necessary based on trends

ACKNOWLEDGEMENTS

- **AMG Orthopedics/Sports Medicine**
- **Michigan Value Collaborative**
- **Michigan Arthroplasty Registry Collaborative Quality Initiative**
- **Ascension St Mary's Hospital**

Identifying Opportunities to Improve Post-Discharge Care in Northern Michigan

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BACKGROUND & CONTEXT

The Michigan Value Collaborative (MVC) is a collaborative quality initiative serving 106 Michigan hospitals and 40 physician organizations that is funded by Blue Cross Blue Shield of Michigan (BCBSM). MVC used claims data from Medicare Fee-for-Service, BCBSM Commercial and Medicare Advantage (MA) PPO, and Blue Care Network (BCN) Commercial and MA HMO plans to create episodes of care for medical and surgical conditions. Each MVC episode of care began with an index event (surgery or inpatient admission) at a Michigan hospital and followed the patient for up to 90 days post-discharge, capturing care utilization at any facility.

METHODS & ANALYSES

- To investigate equity of post-discharge care and outcomes in Michigan, MVC analyzed 30-day episodes of care following hospitalizations for congestive heart failure (CHF) between July 1, 2019, and June 30, 2022. Thirty-day post-discharge rates of follow-up care and readmissions were calculated among patients with CHF in each Michigan county. MVC then mapped county-level rates of post-discharge care to visualize variation in care across Michigan based on patient county of residence.
- Next, MVC sought to understand barriers to receiving timely follow-up care among patients in northern counties—where communities are largely rural and geographically isolated—to identify opportunities for improvement. County-level American Community Survey 2020 five-year estimates of the percentage of households with no internet access and no computing device were extracted from the Agency for Healthcare Research and Quality Social Determinants of Health database and summarized.

POST-DISCHARGE CARE RATE DEFINITIONS

- **Follow-Up Care Rate**
  - **Numerator:**
    - Number of *patients with an outpatient follow-up visit (in-person or via telehealth) within 30 days following an index event*
    - Care received following the index event but prior to a readmission, an inpatient procedure, or an ED visit
  - **Denominator:** Total number of patients with an index stay for a given condition who were discharged to home or home health and did not receive SNF, LTACH, or inpatient rehabilitation services within the 30 days post-discharge
- **Readmission Rate**
  - **Numerator:** Number of *patients with an acute care hospitalization within 30 days post-index discharge*
  - **Denominator:** Total number of patients with an index stay for a given condition

FINDINGS

Figure 1. Follow-Up Visit and Readmission Rates within 30 Days of Hospitalization for Congestive Heart Failure

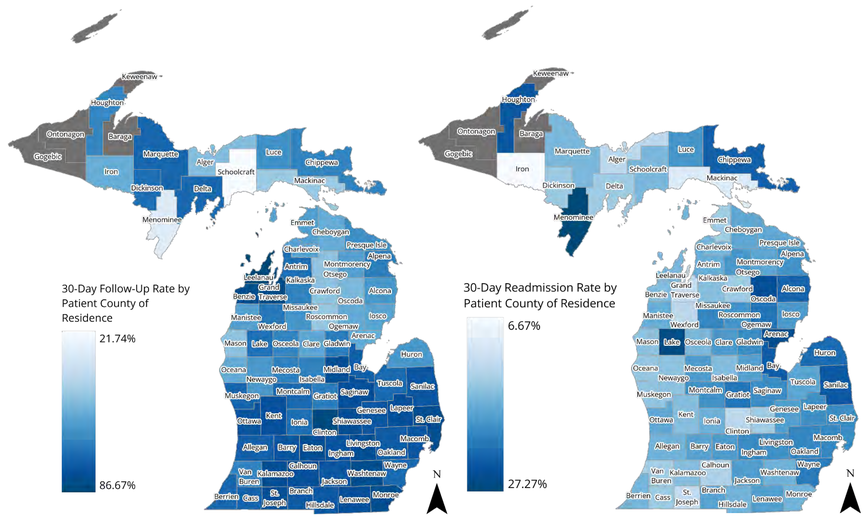
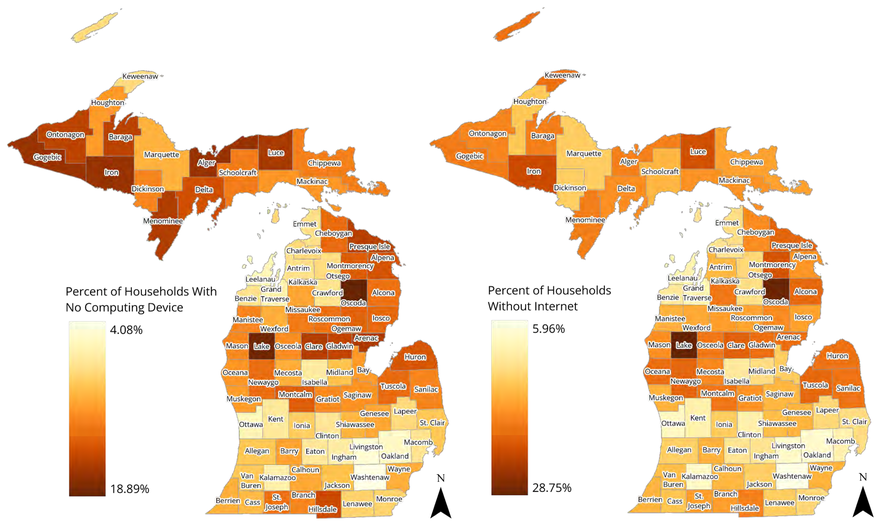


Figure 2. 2020 County-Level American Community Survey Five-Year Estimates for Percent of Households with No Computing Device or Internet



- County-level rates of follow-up care received within 30 days of discharge among patients with CHF ranged from 22% to 87% (Figure 1). Counties with the lowest rates of follow-up care were concentrated in Michigan's northern lower and upper peninsulas (referred to collectively as Northern Michigan).
- County-level rates of readmission within 30 days ranged from 7% to 27% (Figure 1). These outcomes followed a reverse pattern of follow-up visits, with the highest readmission rates occurring in Northern Michigan counties.
- Among Northern Michigan counties, 9% to 28% of households were estimated to lack internet access (Figure 2).
- Likely exacerbating the burden of not having internet access, lack of any computing device - including a smartphone - ranged from 6% to 19% of households among northern counties (Figure 2).
- These counties exemplify the need to optimize medical and communication technology for rural, tribal, and geographically isolated communities, which has been identified as a priority area of the CMS Framework for Advancing Health Care in Rural, Tribal, And Geographically Isolated Communities.

CONCLUSIONS

These findings illuminated potential factors contributing to lower rates of follow-up care and higher rates of readmissions among patients residing in Northern Michigan counties. Notably, patients who do not have internet access and/or a computing device not only lack the opportunity to utilize telehealth for follow-up care, but also lack the ability to correspond with providers or schedule appointments through online patient portals. MVC is leveraging its statewide collaborative learning model to collectively ideate initiatives that improve healthcare access and post-discharge utilization in counties across Michigan.

ACKNOWLEDGEMENTS

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- 2020 County-Level American Community Survey Five-Year Estimates are created by the U.S. Census Bureau and were obtained from the Agency for Healthcare Research and Quality Social Determinants of Health database.