

# Improving Cardiac Rehabilitation Referral Capture across a Health System

## Leveraging the EHR to Automate Referrals

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### **NENIC Annual Trends – 2025**

***Leslie Hutchins MBA, BSN, RN, NI-BC, NE-BC***

Chief Nursing Information Officer, Digital and Technology Solutions

***Ruth Merenguelli MSN, RN, CV-BC, CMSRN***

Clinical Nurse Informatics Specialist

# DISCLOSURES

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The following speaker(s) have no relevant financial relationships to disclose:

Leslie Hutchins  
Ruth Merenguelli

# MISSION, VISION AND VALUES

## MISSION

Yale New Haven Health is committed to innovation and excellence in patient care, teaching, research and service to our communities.



## VISION

Yale New Haven Health enhances the lives of the people we serve by providing access to high value, patient-centered care in collaboration with those who share our values.

## VALUES

- Patient-Centered** – Putting patients and families first
- Respect** – Valuing all people
- Compassion** – Being empathetic
- Integrity** – Doing the right thing
- Accountability** – Being responsible and taking action



# Yale New Haven Health Our Healthcare System & Vision for Future



**Bridgeport Hospital**



**Greenwich Hospital**



**Lawrence + Memorial  
Hospital**



**Westerly Hospital**

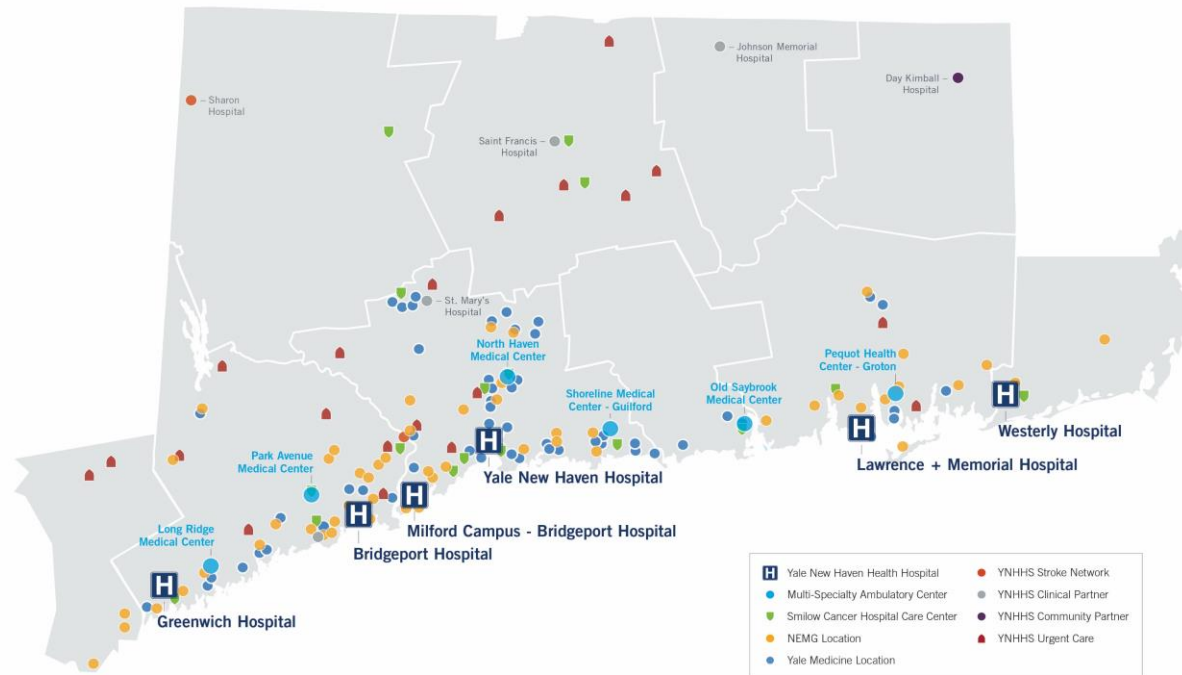


**Yale New Haven  
Hospital**

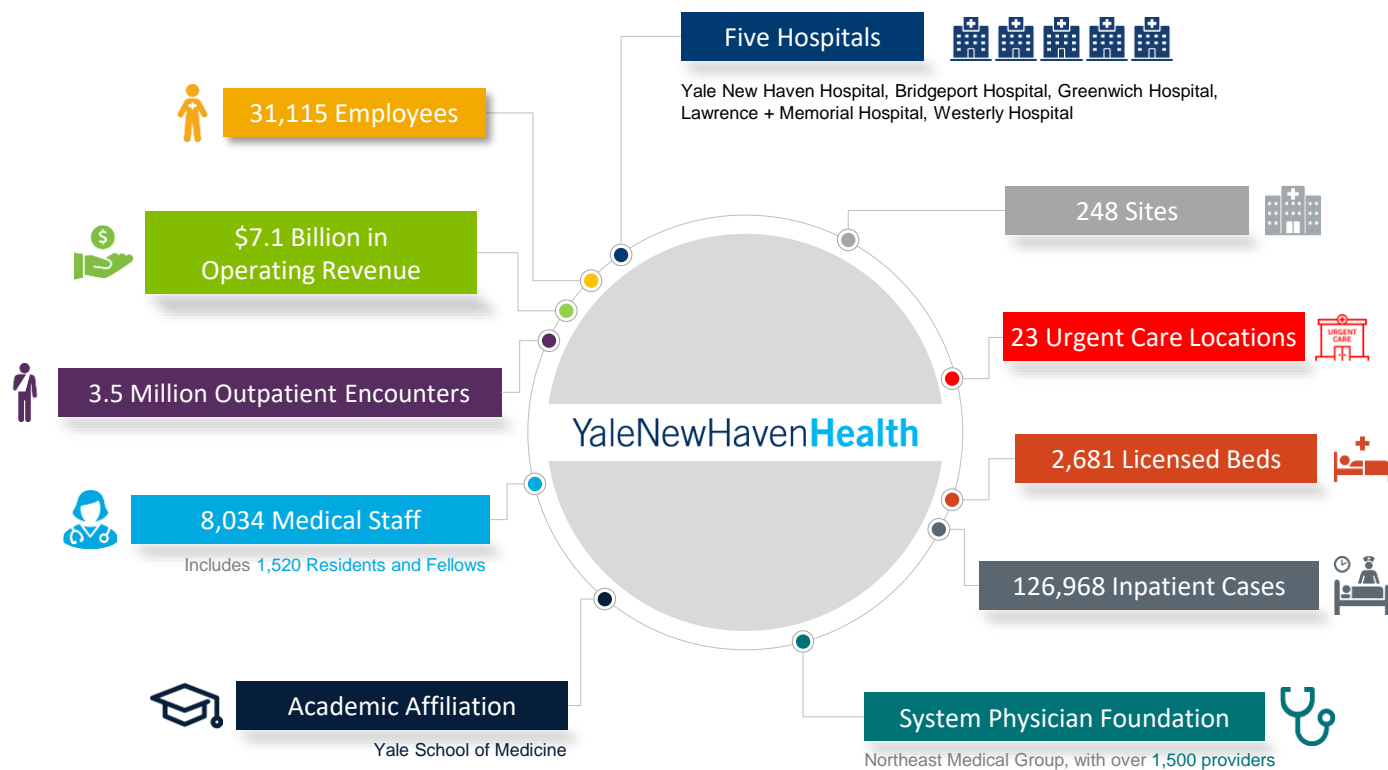


**Northeast Medical  
Group**

# YNHHS / Throughout Our Communities



# Yale New Haven Health / Snapshot (FY 2024)



# Employer of Choice & Provider of Choice



# What is Cardiac Rehabilitation?

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Medically supervised program designed to improve the cardiovascular health of patients to support their transition to an active life following a cardiovascular event.

Myocardial infarction

Angioplasty with or without stent placements

Chronic stable angina

Coronary Artery Bypass graft surgery (CABG)

Heart failure

Heart transplant

Heart valve repair or replacement surgery

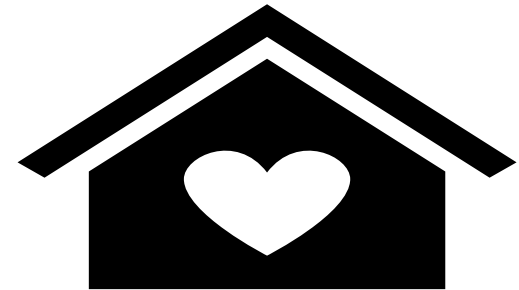
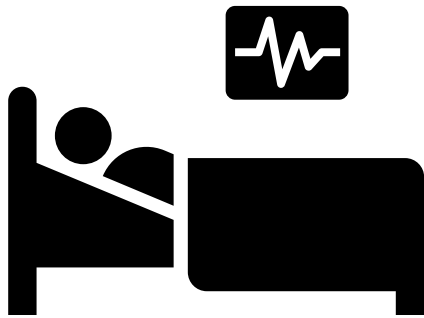
Benefits:

- ✓ Reduces risks of future cardiovascular events, hospital readmission and death
- ✓ Improves quality of life
- ✓ Supports long term lifestyle changes
- ✓ Reduce depression, anger and other psychological problems that can follow a heart attack or surgery

# BACKGROUND

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Nurses send Cardiac rehabilitation referral communication letter electronically for eligible patients to the agency nearest to the patient's address.



Two-step process

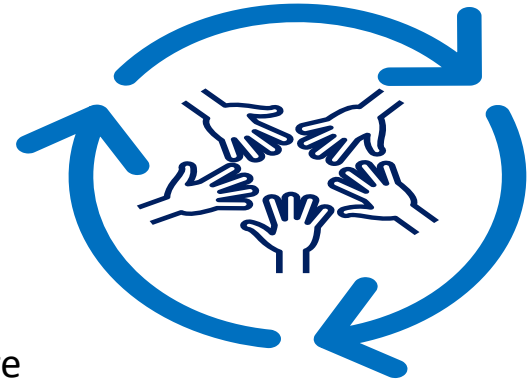
Minimum of 15 clicks  
in the EHR



# METHODS

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- **System-Level Quality Improvement Project**
  - Convened a multidisciplinary team
- **Design and Implement Automated Workflow**
  - **Goal #1:** Decrease nursing workload
  - **Goal #2:** Improve cardiac rehabilitation referral capture
- **Highly Iterative Process**
  - Tried a robotic technology solution to mimic the nurse workflow in the electronic health record but opted for a more simplified solution using a rule-based work queue
  - Created a **Rule-based Work Queue Solution** in the Electronic Health Record (EHR) which models the discharge nurse workflow, querying the electronic health record for patients eligible for cardiac rehabilitation based on specific diagnosis and procedure codes.
  - The work queue solution replaced (eliminated) the fax paper workflow in the Cardiac Rehabilitation Referral Agency, providing timely access and efficiency for post discharge patient care needs.



# RESULTS

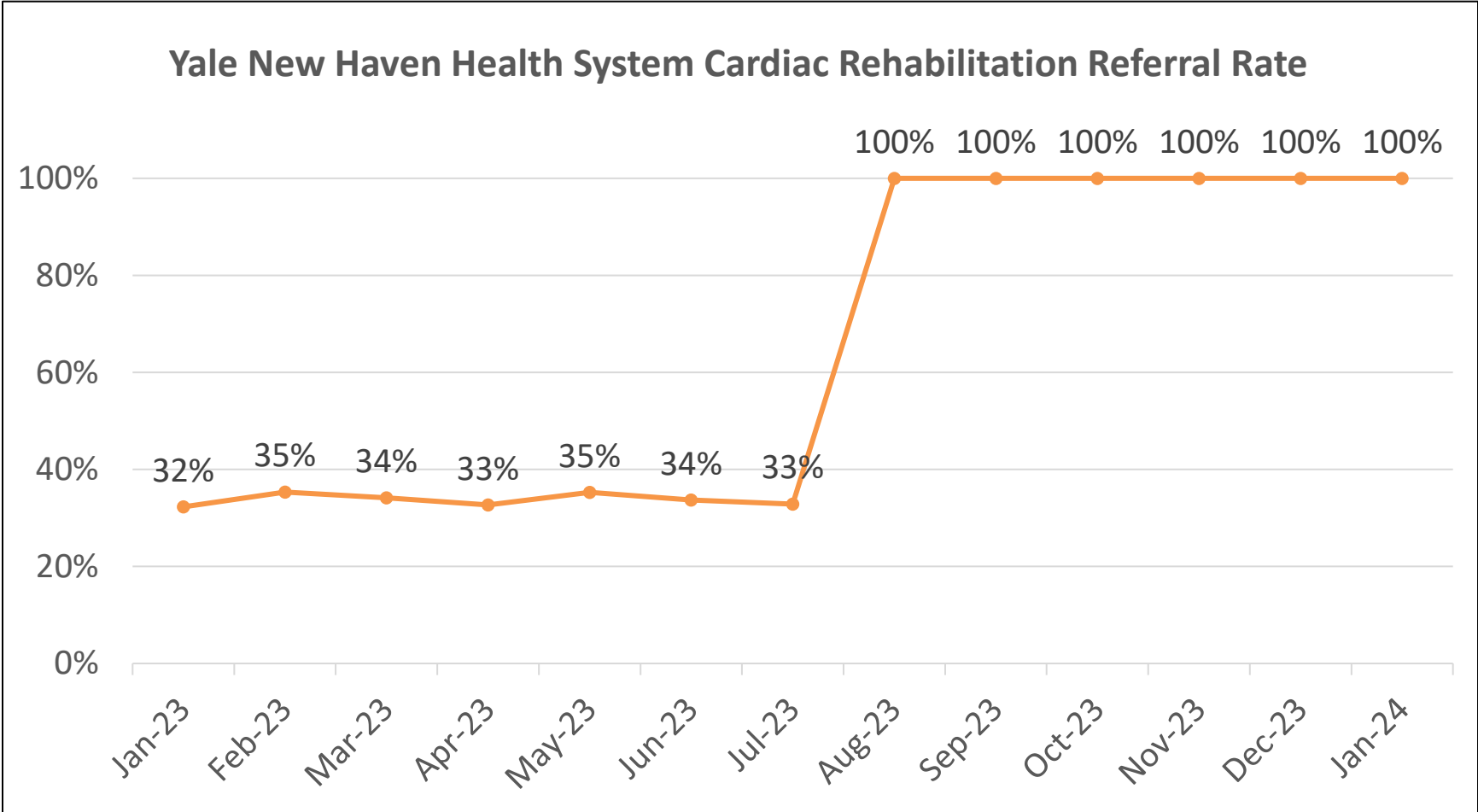
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- **October 2023:** Automation process launched
  - **Result:** Improved cardiac rehabilitation referral rate to 92%
- **February 2024:** Logic was expanded to capture patients discharged over the last 6 months
  - **Result:** 100% of patients discharged from August 1<sup>st</sup>, 2023 were successfully referred
- Five-hospital health system referral rate improved from 32% (n=356 ) to 100% (n=1246).
  - **Summary:** Exceeded the 80% goal and sustained 100% referral rate.

## Additional Outcomes:

- Improved communication to patients via their After Visit Summary (AVS)
- Eliminated the cognitive burden for bedside nursing during the discharge process
- Eliminated the time spent auditing the original manual process performed by unit managers/designee
- Improved efficiency for the Cardiac Rehab Referral team (eliminated the fax/paper workflows)

# RESULTS



# IMPLICATIONS

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- ✓ Scalability of automation can be applied to similar workflows and nursing administrative tasks in the electronic health record (EHR).
- ✓ Elimination of such tasks from nursing workflows improves nurse satisfaction while decreasing cognitive burden.
- ✓ Automation process improved referral rate and enhanced the continuum of care for our patients by improving opportunities to access post-hospital resources.



# ACKNOWLEDGMENTS

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- **Joseph Petreycik**, Rehabilitation Coordinator
- **Kris Rodgerson**, Clinical Systems Engineer
- **Nancy Rutski**, DTS Systems Analyst
- **Kaneil Willocks**, Digital Technology Solutions Lead
- **Joyce Oen-Hsiao**, Associate Professor of Medicine

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thank you