Building a Sustainable, Evidence-Based Mortality Review Program

Branden Robertson MPH, NR-P, CPHQ, CPHRM, CPPS

CarilionClinic

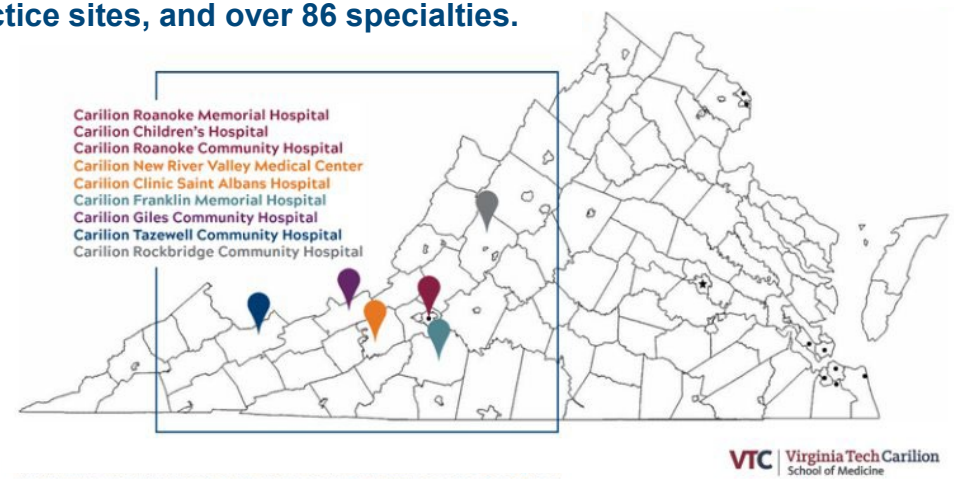
Learning Objectives

- Discuss an intuitive and sustainable evidence-based mortality review process.
- Explain how to leverage a strategic focus to prioritize quality improvement work.

CARILION CLINIC

- **501c 3 not-for-profit**
- **$2.6 billion** in annual revenue
- Headquartered in **Roanoke, Virginia**
- **8** hospitals **+ 1** Children's Hospital
- **High Performing in 15 Procedures/Conditions and 1 Adult Specialty** – US News & World Report
- **Virginia Tech Carilion School of Medicine and Fralin Biomedical Research Institute at VTC**
- **Radford University Carilion**
- Serving **1 million** Virginians across about **18 counties** and **6 cities** in western Virginia and southern West Virginia
- **DYAD Leadership**

Carilion Clinic provides care for more than one million people and serves central and southwestern Virginia with nine hospitals, 295 practice sites, and over 86 specialties.



BY THE NUMBERS

1,041 licensed beds

60 neonatal ICU beds

14,980 employees

7,400 square-mile service area

144,062 urgent care visits

54,201 surgeries

48,160 hospital admissions

1,798,629 outpatient visits

174,201 Emergency Department visits

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COLLABORATION COMMITMENT COMPASSION COURAGE CURIOSITY

American Hospital Association
Quest for Quality Prize®

FORTUNE
AMERICA's MOST INNOVATIVE COMPANIES
2023
statista

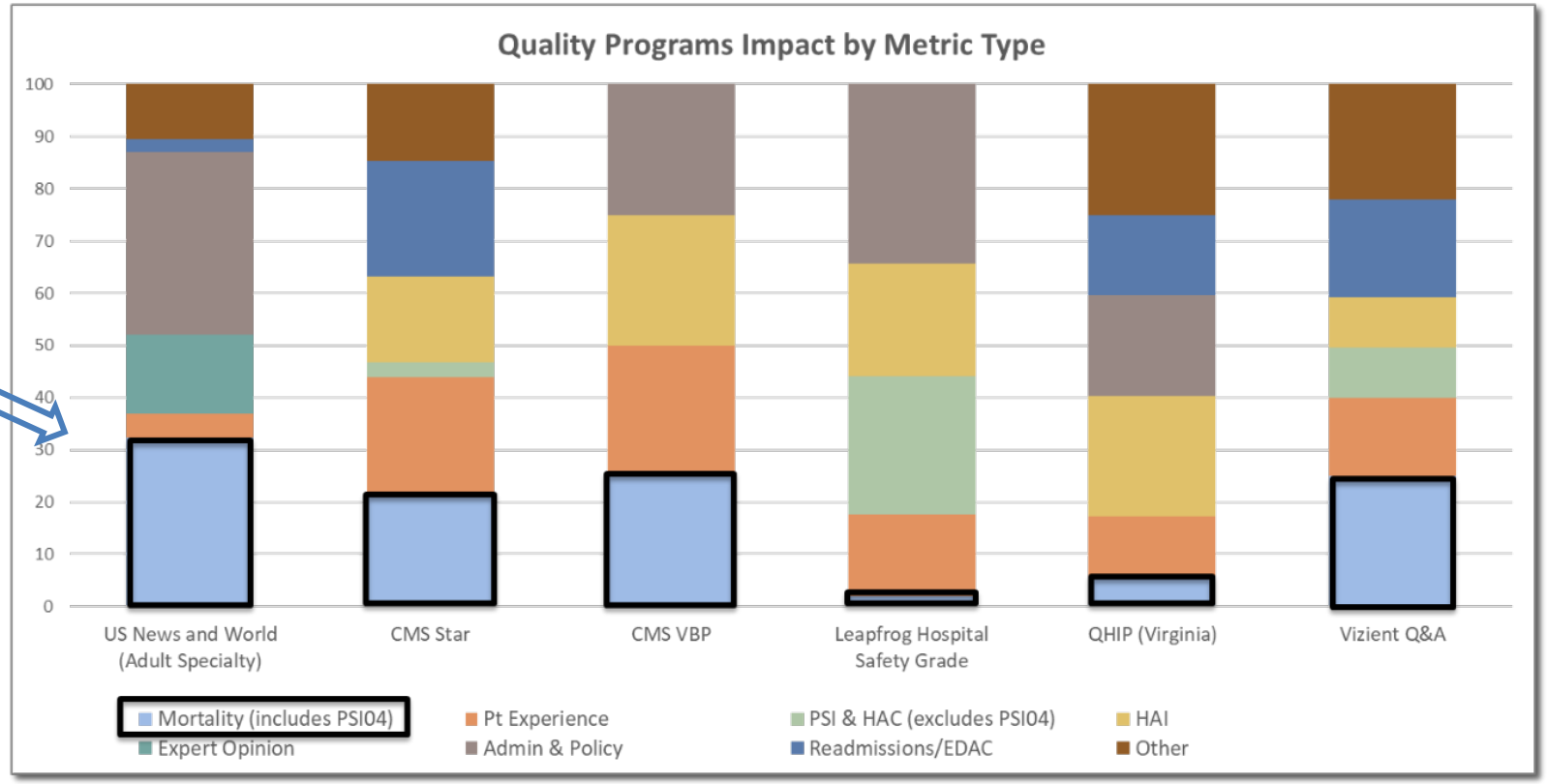
BEST REGIONAL HOSPITALS
U.S.News & WORLD REPORT
SOUTHWESTERN VIRGINIA
RECOGNIZED IN 16 TYPES OF CARE
2025-2026

MAGNET RECOGNIZED
AMERICAN NURSES CREDENTIALING CENTER

HIGH PERFORMING HOSPITALS
U.S.News & WORLD REPORT
2024
MATERNITY

Why Develop a Mortality Program?

- **Patient Outcomes**
  - Identify *system process opportunities* that improve overall patient outcomes
- Significant impact on multiple publicly reported programs
- For Carilion Clinic, benchmarking with like institutions demonstrated clear need to improve our mortality performance and need for new processes, structure, and team to facilitate the improvement



Carilion Clinic's Mortality Program

Would you have wanted your loved one to receive the same care?

Guiding Principles

- Safety learning system
- Deference to Expertise
- Registry model
- Multidisciplinary
- Enterprise wide

**Adapted from Mayo Clinic Model*

FY25 Areas of Focus

- Expansion of inpatient hospice admission status (GIP)
- Documentation and coding for risk adjustment
- Early sepsis recognition and intervention in the Emergency Department
- Processes to enhance management of transfer requests
- Nurse review process

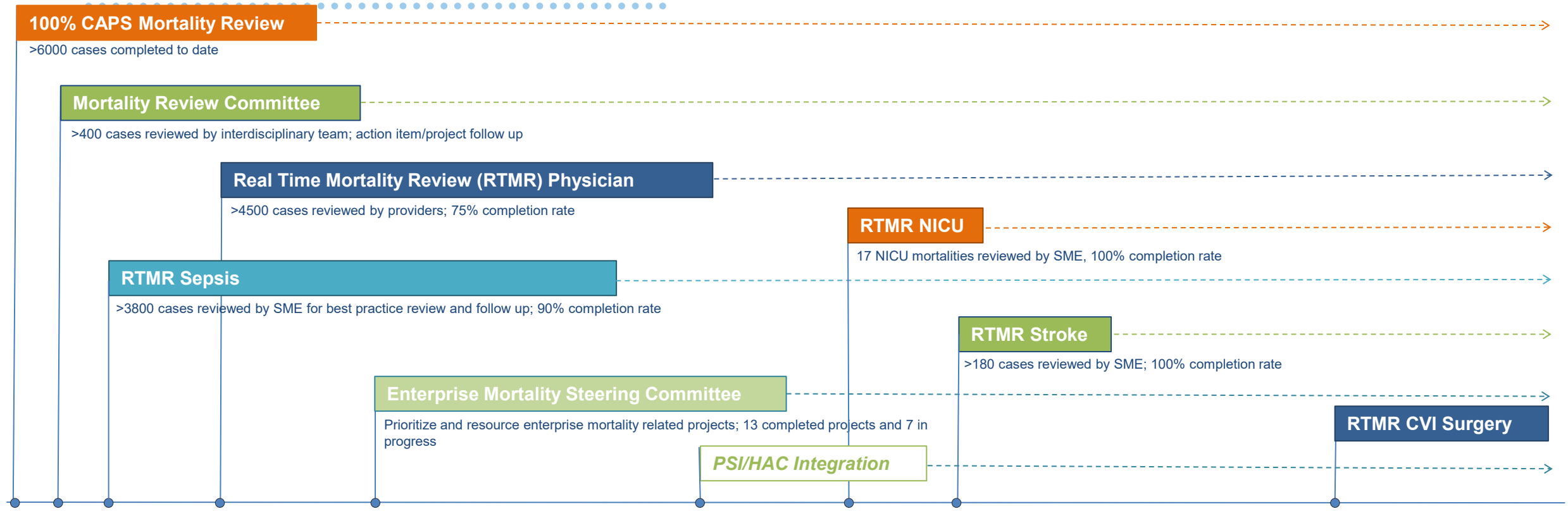
Set the Standard

- Leverage **portfolio management system** to prioritize projects and allocate resources to support

- **Integrate quality plan and scorecard metrics** to support sustainability
  - Include metrics in risk/benefit scoring and prioritization matrix

- Develop steering committee comprised of executives and senior management *throughout the organization* to ensure **strategic alignment**
  - Set standard for expectations of mortality improvement
  - Champion outcomes within their functional span of control

Mortality Program Development



2022		2023												2024												2025					
NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN

Next Steps:
SME: *CVI Medical, Surgery, Aspiration Pneumonia*
General: *30-day Mortality, Nurse, Consulting Physician Mortality Reviews*

v. 8/2025

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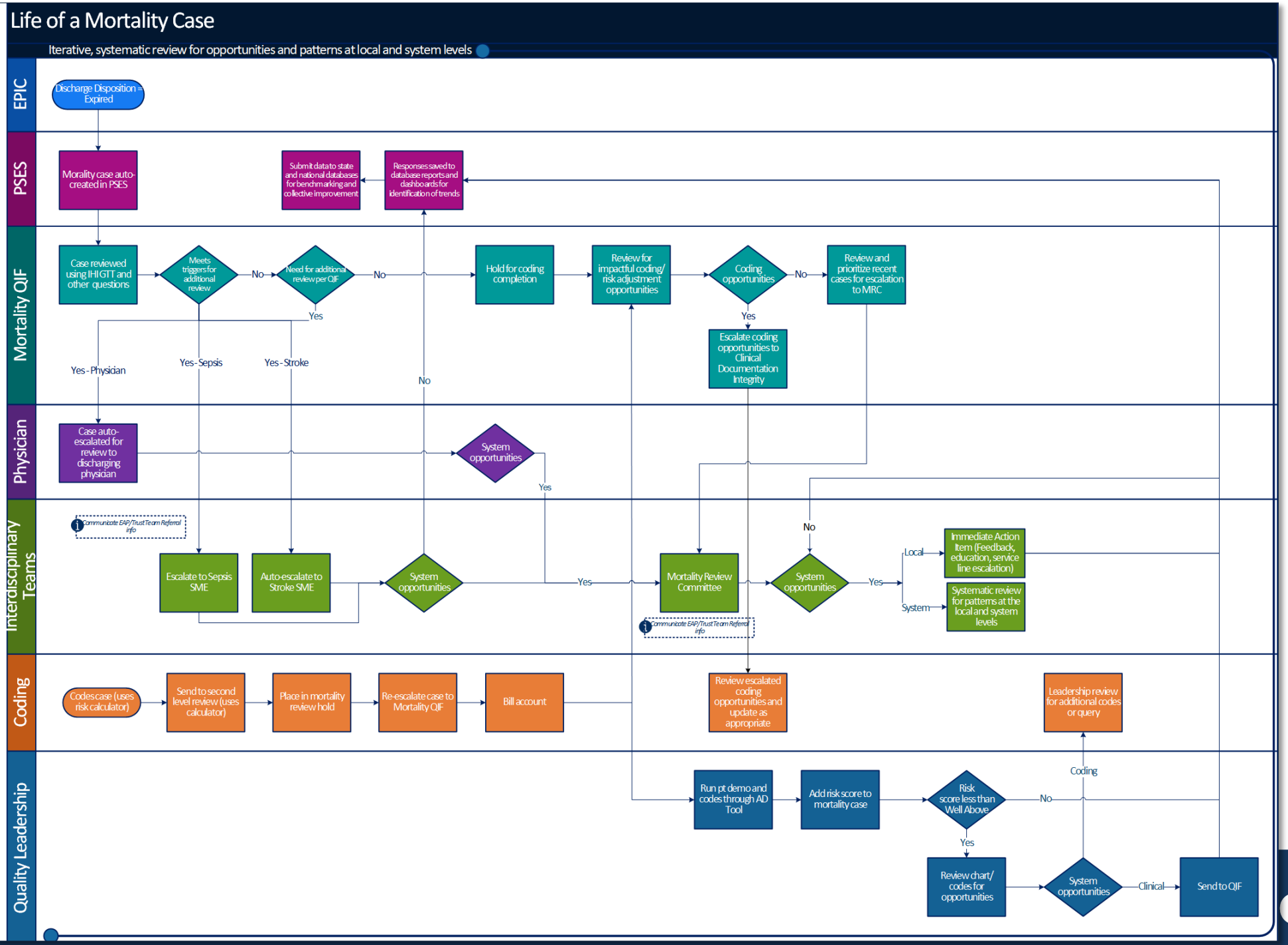

Mortality Review Process:

Automated
Collaborative
Iterative

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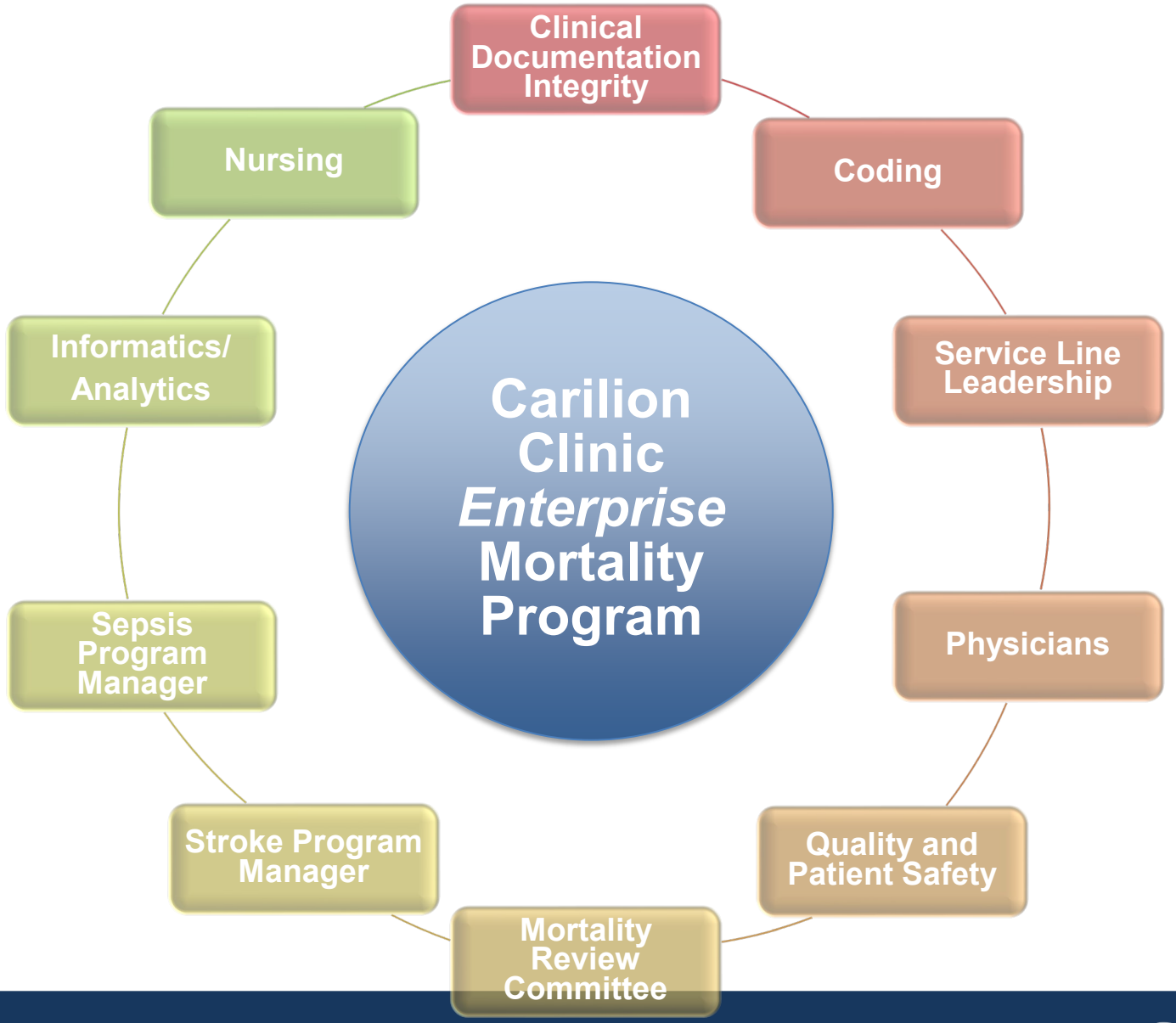
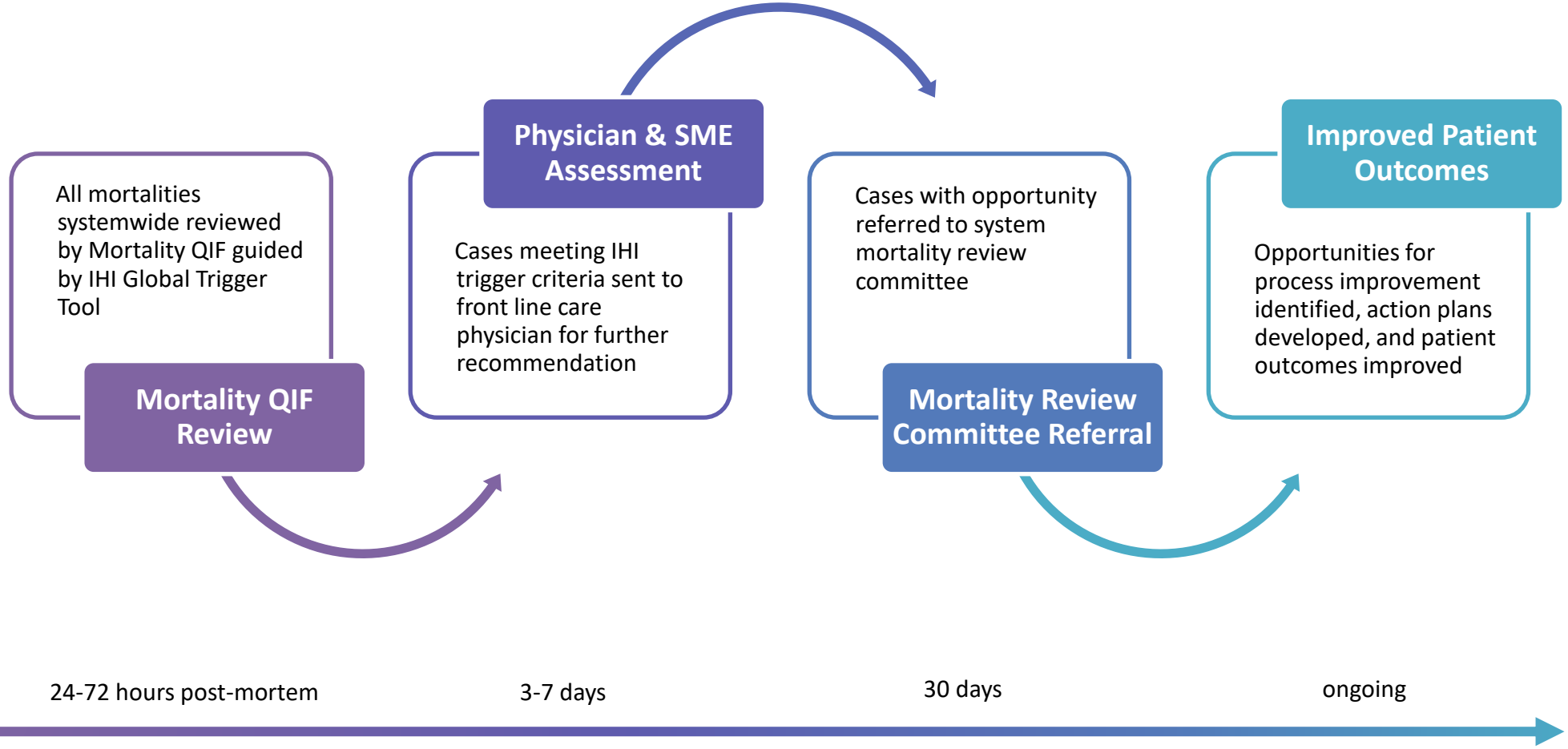
“It Takes a Village”

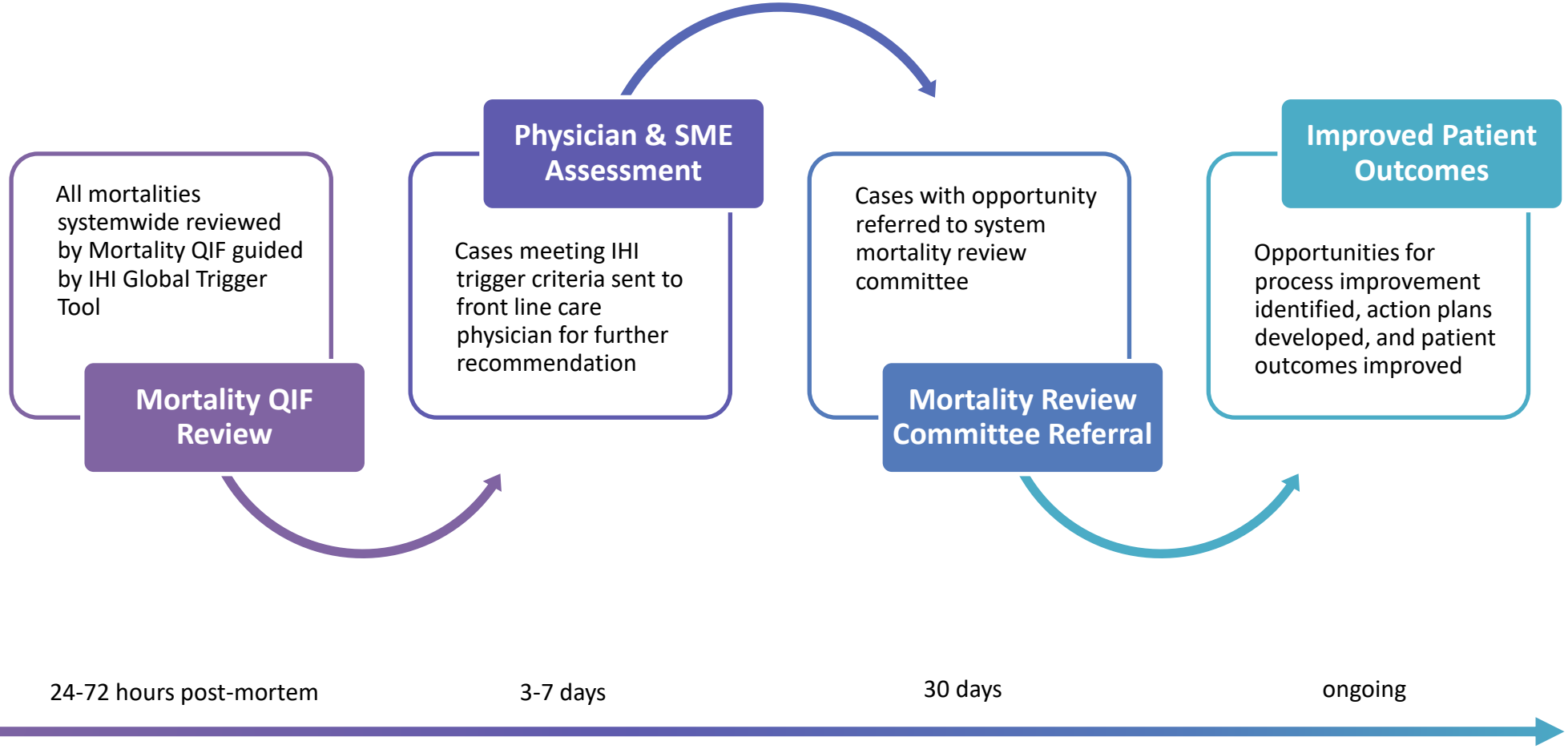
Multidisciplinary Approach:
a guiding principle for the Carilion Clinic Mortality Program



Real Time Mortality Review (RTMR) Process



Real Time Mortality Review (RTMR) Process



RTMR: Mortality QIF Review

General Care

Was reason for admission hospice or palliative care --Select--

DDNR --Select--

Qualify for GIP --Select--

Palliative Care Consulted? --Select--

Transfer from OSH --Select--

SNF Transfer --Select--

Transfusion or use of blood products? --Select--

Code/Rapid Response --Select--

Acute Dialysis (CRRT or HD) --Select--

Positive Blood Cultures --Select--

DVT or Emboli? --Select--

Fall during stay --Select--

Pressure Ulcer during stay --Select--

Readmission within 30 days --Select--

Use of restraints during stay? --Select--

Aspiration Event during stay? --Select--

Stroke during stay? --Select--

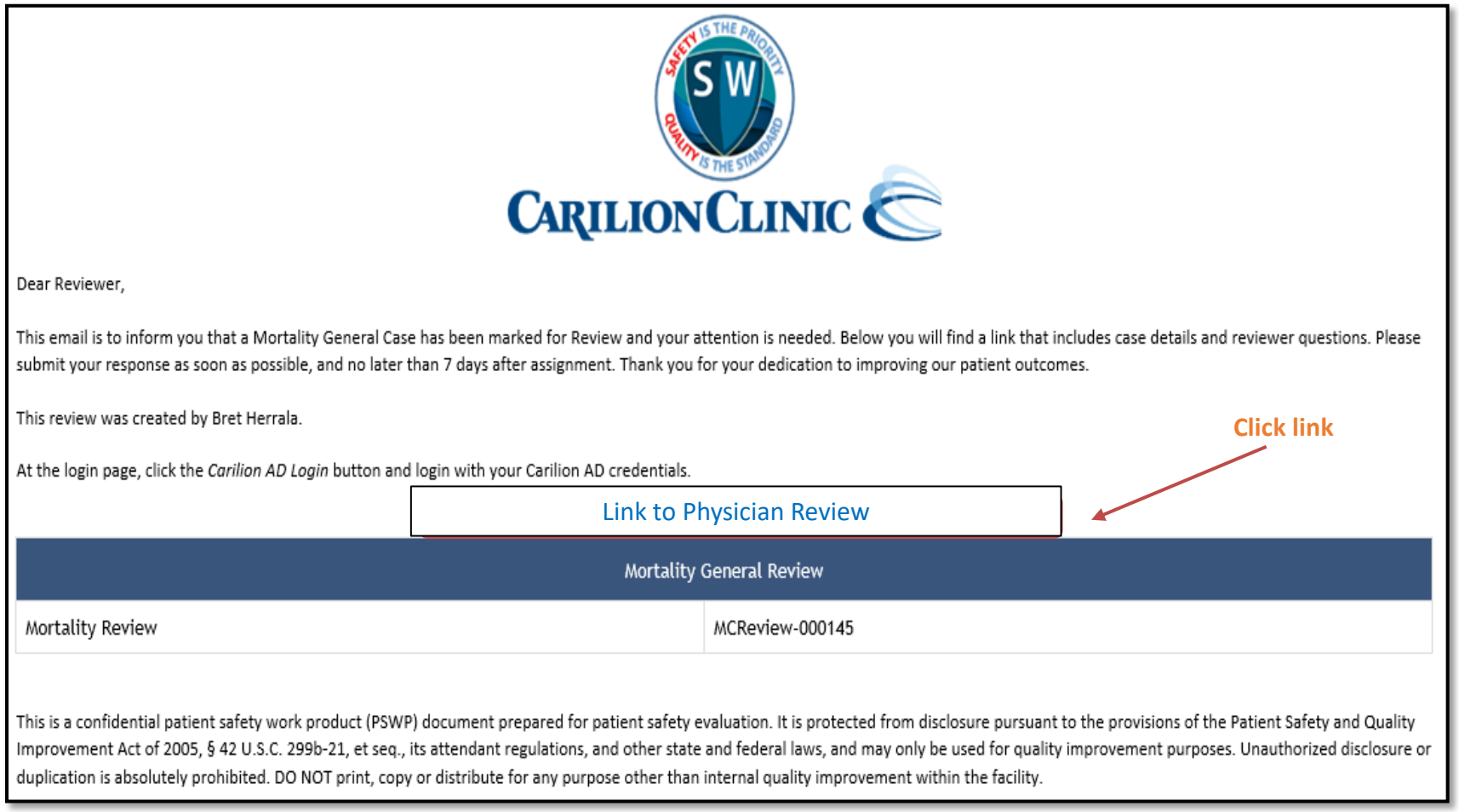
Transfer to higher level of care --Select--

Any procedure complication --Select--

Sepsis during stay --Select--

Related Service Line(s)

RTMR: Physician Escalation



Dear Reviewer,

This email is to inform you that a Mortality General Case has been marked for Review and your attention is needed. Below you will find a link that includes case details and reviewer questions. Please submit your response as soon as possible, and no later than 7 days after assignment. Thank you for your dedication to improving our patient outcomes.

This review was created by Bret Herrala.

Click link

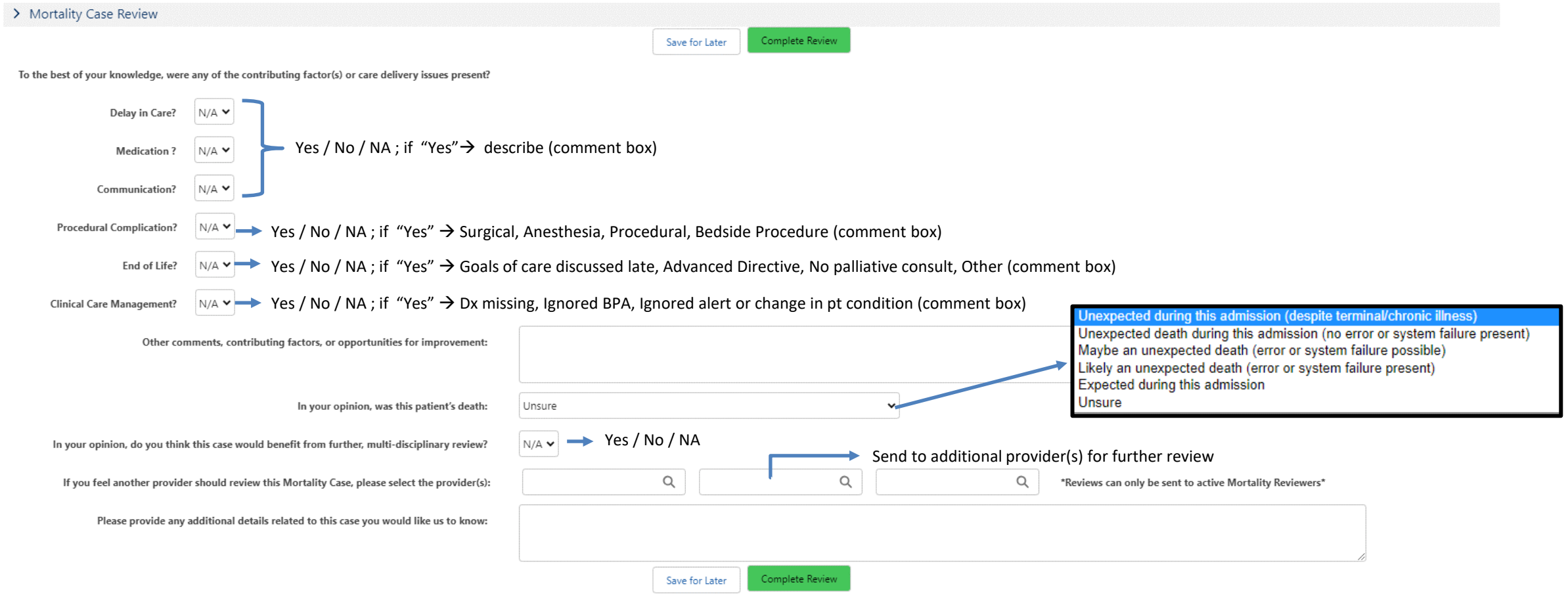
At the login page, click the *Carilion AD Login* button and login with your Carilion AD credentials.

Link to Physician Review

Mortality General Review	
Mortality Review	MCReview-000145

This is a confidential patient safety work product (PSWP) document prepared for patient safety evaluation. It is protected from disclosure pursuant to the provisions of the Patient Safety and Quality Improvement Act of 2005, § 42 U.S.C. 299b-21, et seq., its attendant regulations, and other state and federal laws, and may only be used for quality improvement purposes. Unauthorized disclosure or duplication is absolutely prohibited. DO NOT print, copy or distribute for any purpose other than internal quality improvement within the facility.

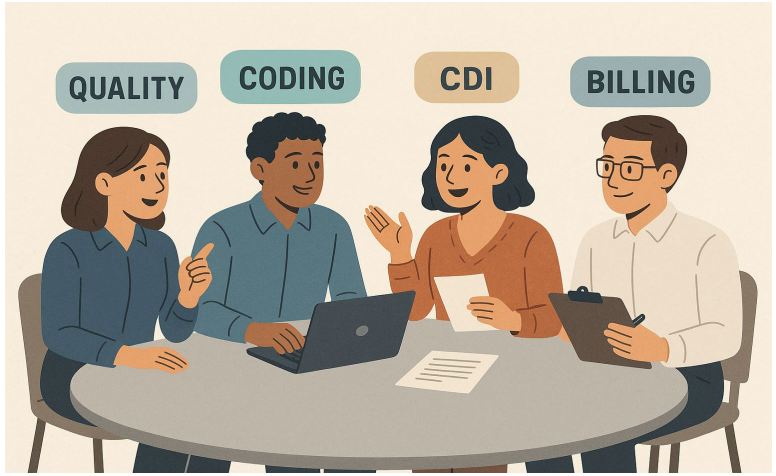
RTMR: Physician Review



Measuring Risk Adjusted Mortality

Utilizing a Risk Adjustment Calculator allows for

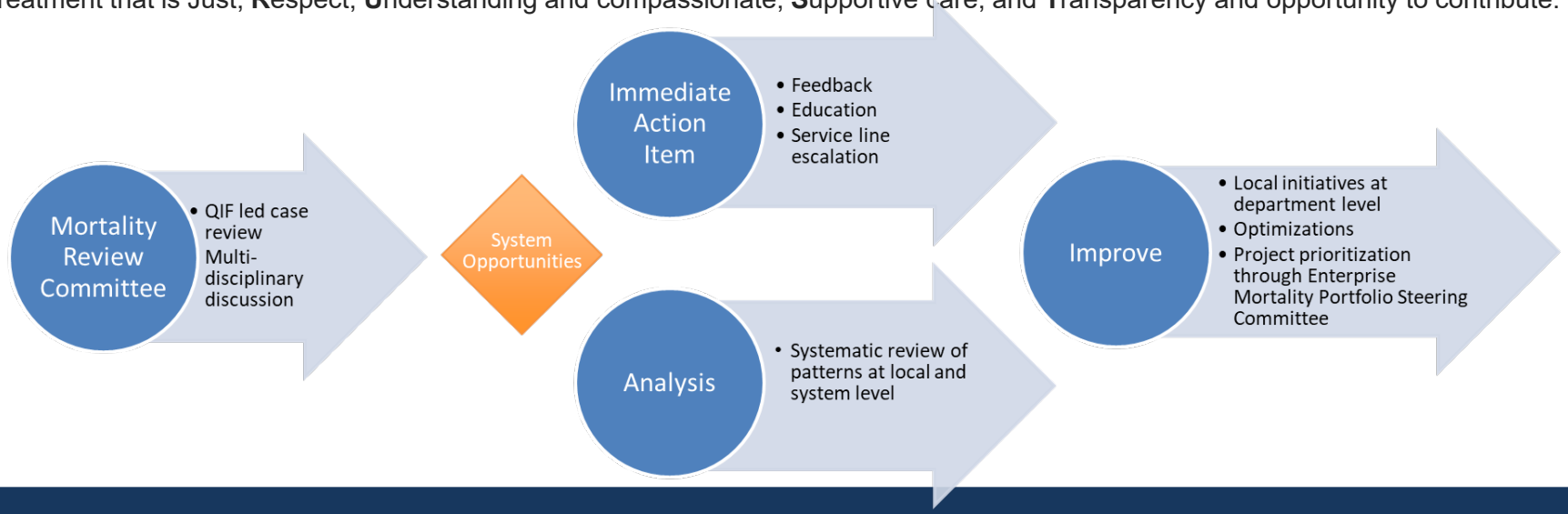
- Objective review of commonly missed DRG related comorbidities
- Generation of a stratified risk score
  - Patients with a score below "Well Above" go through an additional review for clinical opportunities, codes, or POA status
- An additional trigger for interdisciplinary Mortality Review Committee



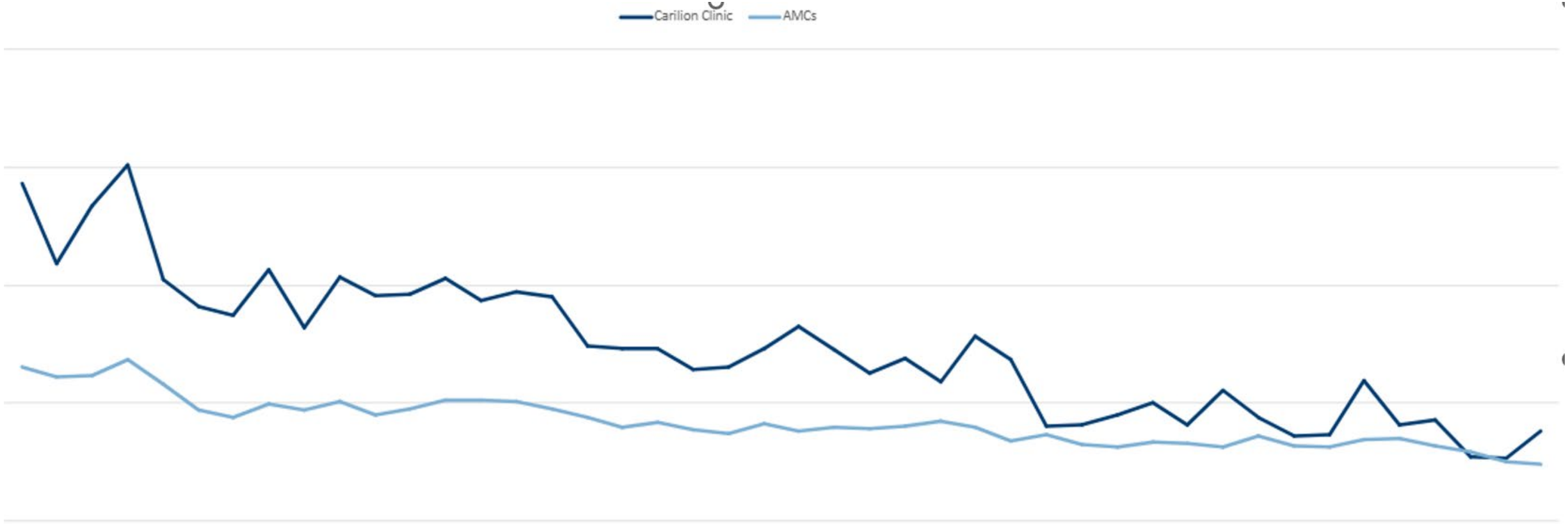
Mortality Review Committee

As a group of multidisciplinary, multispecialty professionals, we seek to identify system failures and opportunities for improvement

- We do not seek attribution
- We do not determine preventability or causality
- We seek to establish opportunity for improvement
- We seek to support any staff who cared for the patient
  - TRUST Team (Second Victim Support)
    - **T**reatment that is Just, **R**espect, **U**nderstanding and compassionate, **S**upportive care, and **T**ransparency and opportunity to contribute.



Mortality Index Performance



Source: Vizient CDB 8/5/24
Vizient data subject to change up to 6 months based on coding and billing changes.
Exclusions: Hospice, Bad Data, and Neonate Cases
2023 AMC Vizient Risk Model

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Next Steps

Integration of outpatient 30-day mortality and collaboration with community health to address opportunities

Service line focused work

Continuous improvement of data structure to better understand risk adjusted performance and patient outcomes

Lessons Learned

PARTNERSHIP IS **KEY**

TRUST BUT VERIFY/ OPTIMIZATION OF PROCESSES

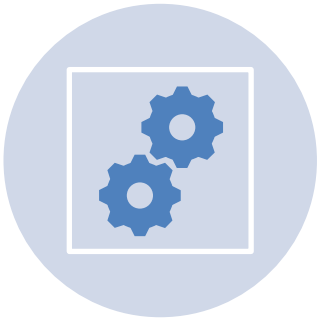
WELCOMING OF OUTSIDE EVALUATION

UNDERSTANDING DOWNSTREAM EFFECTS OF SILOED PROCESSES

ASSUMPTIONS THAT POPULATION CHARACTERISTICS DRIVE OUTCOMES

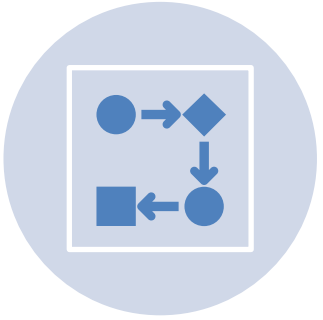
Key Takeaways

Leverage existing software, programs, and workflows (PSES)



Automate manual processes

Coding accuracy allows for improved performance tracking and appropriate benchmarking



Establish a sustainment plan from the beginning. Standardization helps!

Questions?

Brrobertson@CarilionClinic.org