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Turning the Tide: A Strategic, Sustainable Approach to Improve Mortality Outcomes

M. Suzy Kraemer, MD, FACP, Chief Quality Officer

Ashli Semones, MPA, PMP, Senior Director

Lara Richards, MSN, RN, Quality Improvement Facilitator

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

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Learning Objectives



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



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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

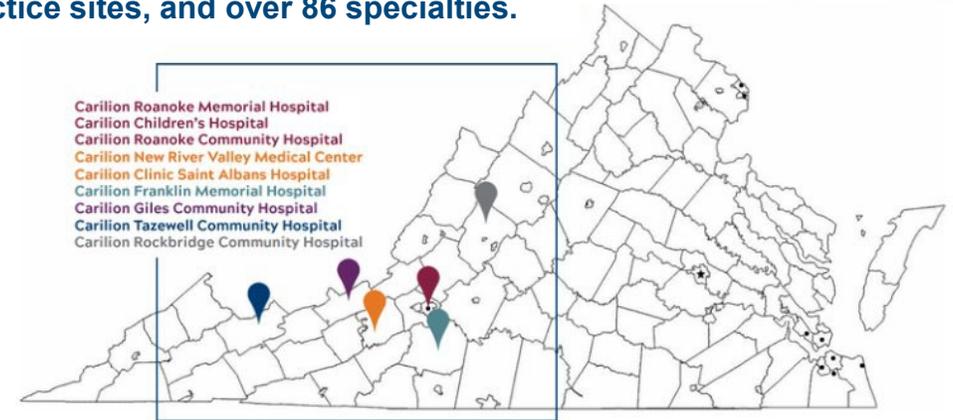
Virginia Tech Carilion School of Medicine and Fralin Biomedical Research Institute at VTC

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.



VTC | Virginia Tech Carilion School of Medicine

BY THE NUMBERS

1,041
licensed beds

144,062
urgent care visits

60
neonatal ICU beds

54,201
surgeries

14,980
employees

48,160
hospital admissions

174,201
Emergency Department visits

7,400
square-mile service area

1,798,629
outpatient visits



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American Hospital Association
Quest for Quality Prize®



COLLABORATION



COMMITMENT



COMPASSION



COURAGE



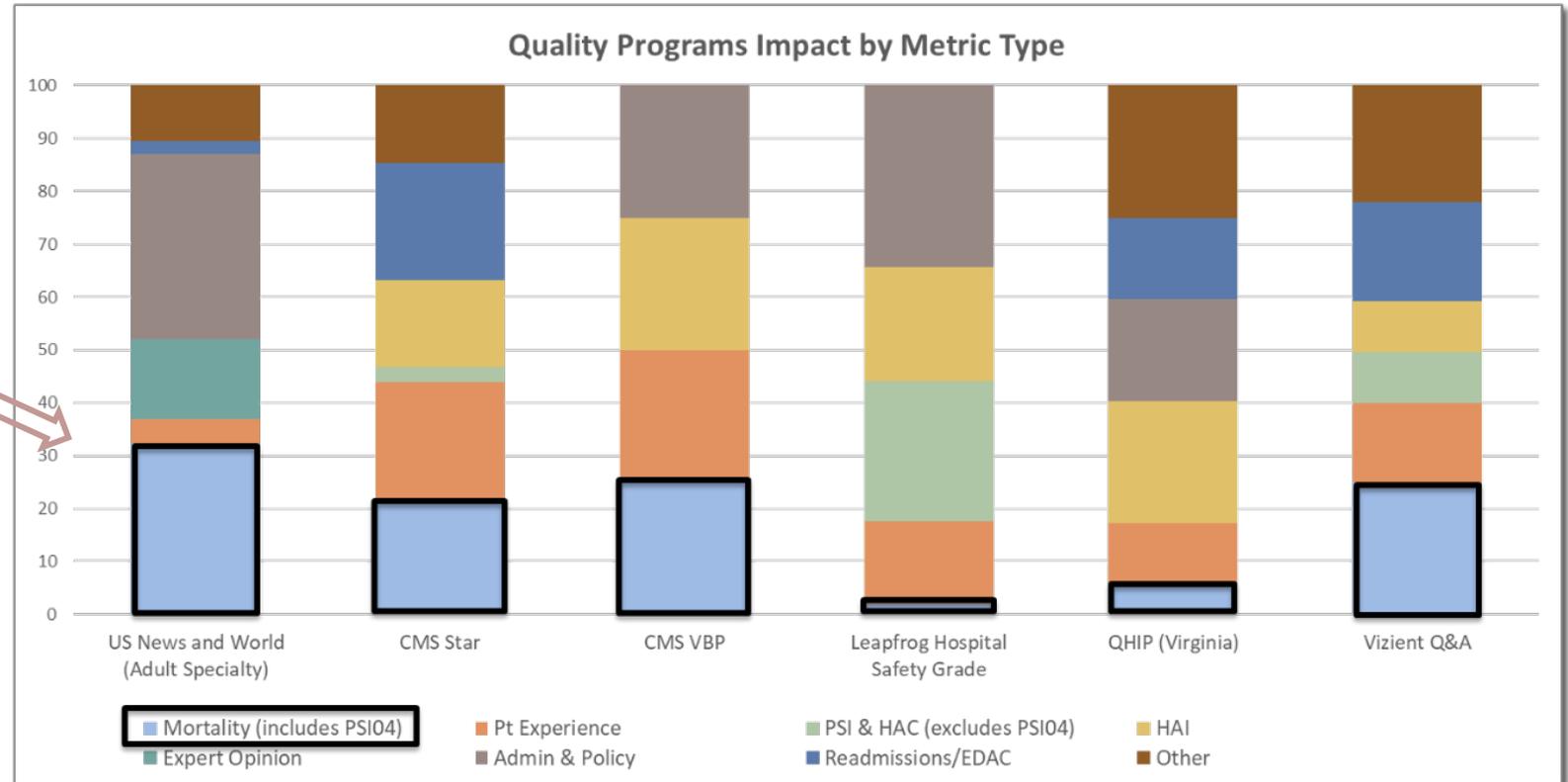
CURIOSITY

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

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

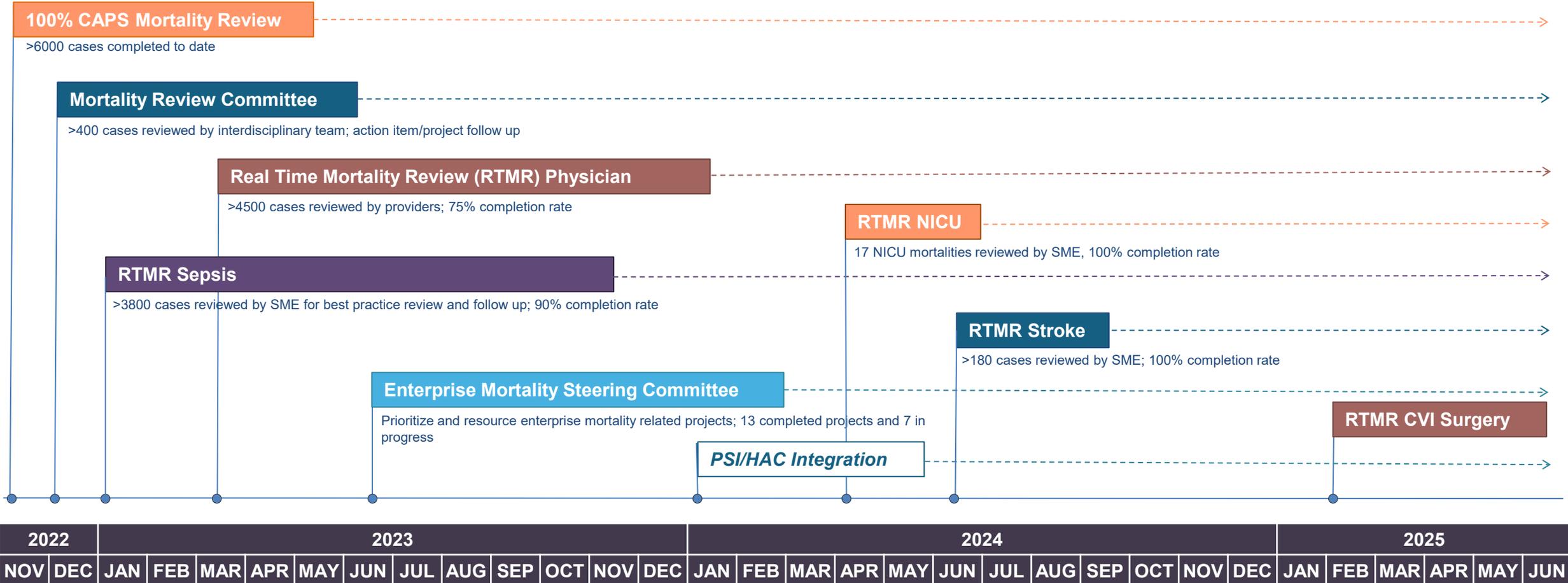
**Adapted from Mayo Clinic Model*

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

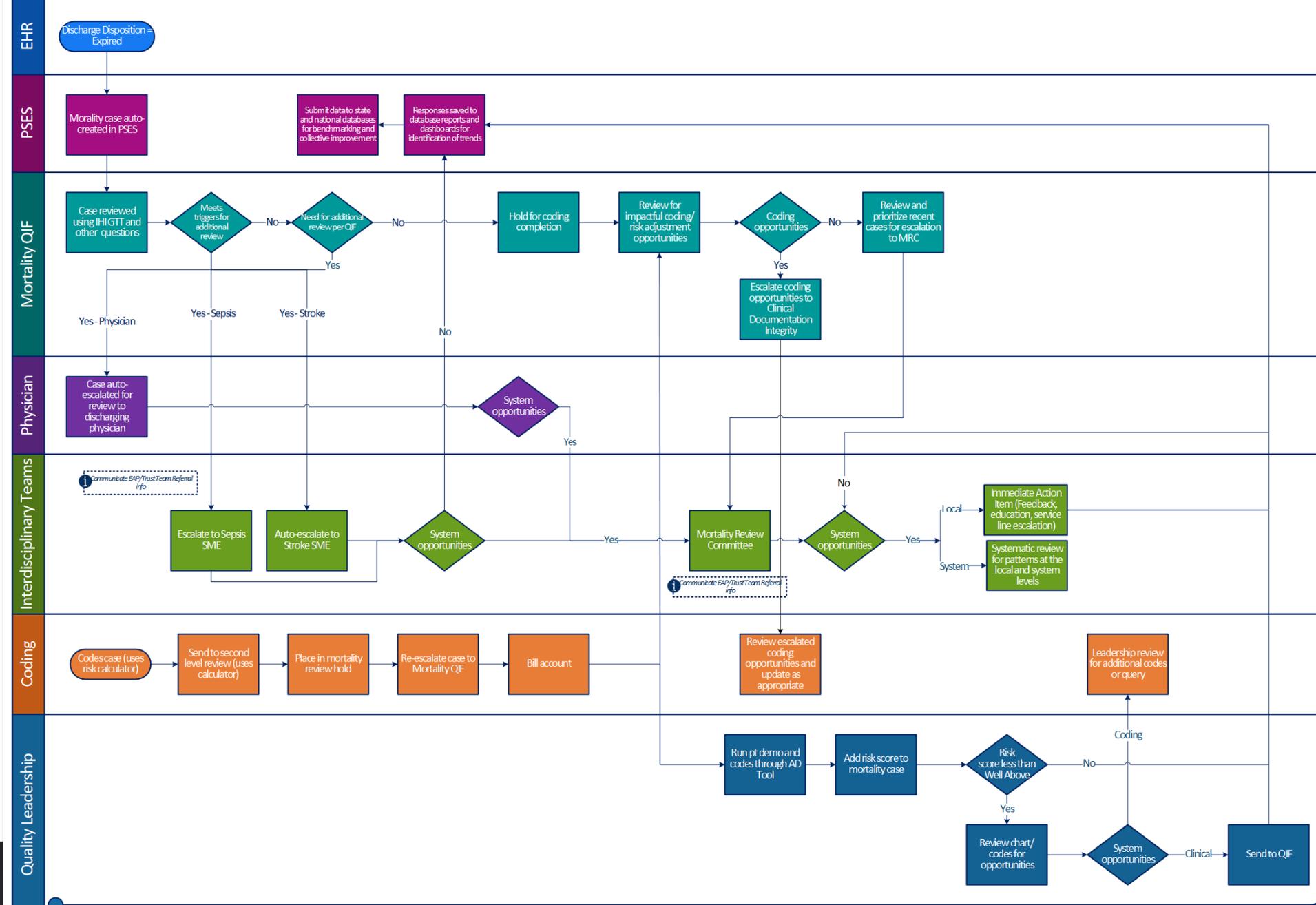


Next Steps:
SME: CVI Medical, Surgery, Aspiration Pneumonia
General: 30-day Mortality, Nurse, Consulting Physician Mortality Reviews

v. 8/2025

Life of a Mortality Case

Iterative, systematic review for opportunities and patterns at local and system levels



Mortality Review Process: Automated Collaborative Iterative

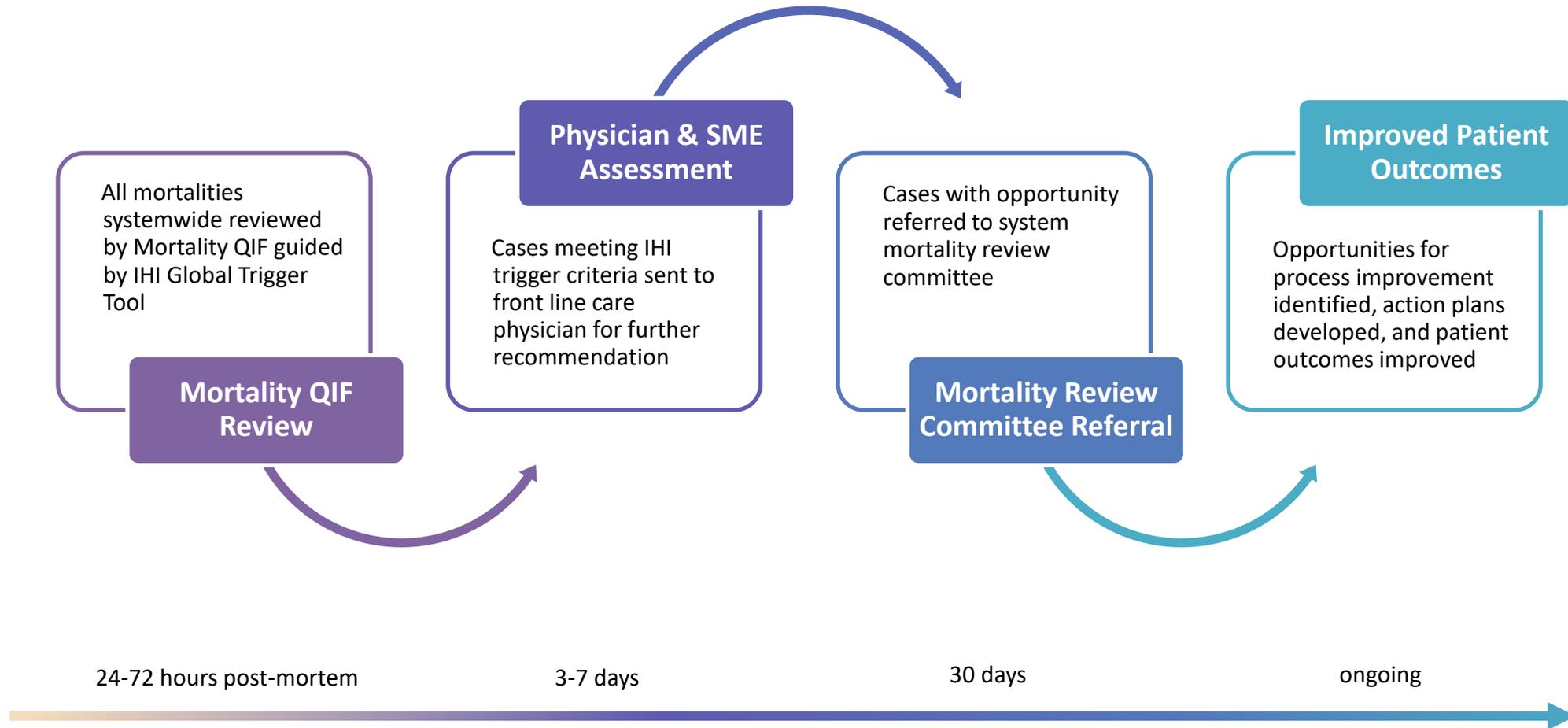
“It Takes a Village”

Multidisciplinary Approach:

a guiding principle for the Carilion Clinic Mortality Program



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




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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.

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

[Link to Physician Review](#)

Click link 

Mortality General Review	
Mortality Review	MCRReview-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



> Mortality Case Review

Save for Later

Complete Review

To the best of your knowledge, were any of the contributing factor(s) or care delivery issues present?

Delay in Care?

N/A

Medication?

N/A

Communication?

N/A

Yes / No / NA ; if "Yes" → describe (comment box)

Procedural Complication?

N/A

Yes / No / NA ; if "Yes" → Surgical, Anesthesia, Procedural, Bedside Procedure (comment box)

End of Life?

N/A

Yes / No / NA ; if "Yes" → Goals of care discussed late, Advanced Directive, No palliative consult, Other (comment box)

Clinical Care Management?

N/A

Yes / No / NA ; if "Yes" → Dx missing, Ignored BPA, Ignored alert or change in pt condition (comment box)

Other comments, contributing factors, or opportunities for improvement:

In your opinion, was this patient's death:

Unsure

Unexpected during this admission (despite terminal/chronic illness)
Unexpected death during this admission (no error or system failure present)
Maybe an unexpected death (error or system failure possible)
Likely an unexpected death (error or system failure present)
Expected during this admission
Unsure

In your opinion, do you think this case would benefit from further, multi-disciplinary review?

N/A

Yes / No / NA

Send to additional provider(s) for further review

If you feel another provider should review this Mortality Case, please select the provider(s):

Reviews can only be sent to active Mortality Reviewers

Please provide any additional details related to this case you would like us to know:

Save for Later

Complete Review

Measuring Risk Adjusted Mortality

Utilizing a Risk Adjustment Calculator allows for

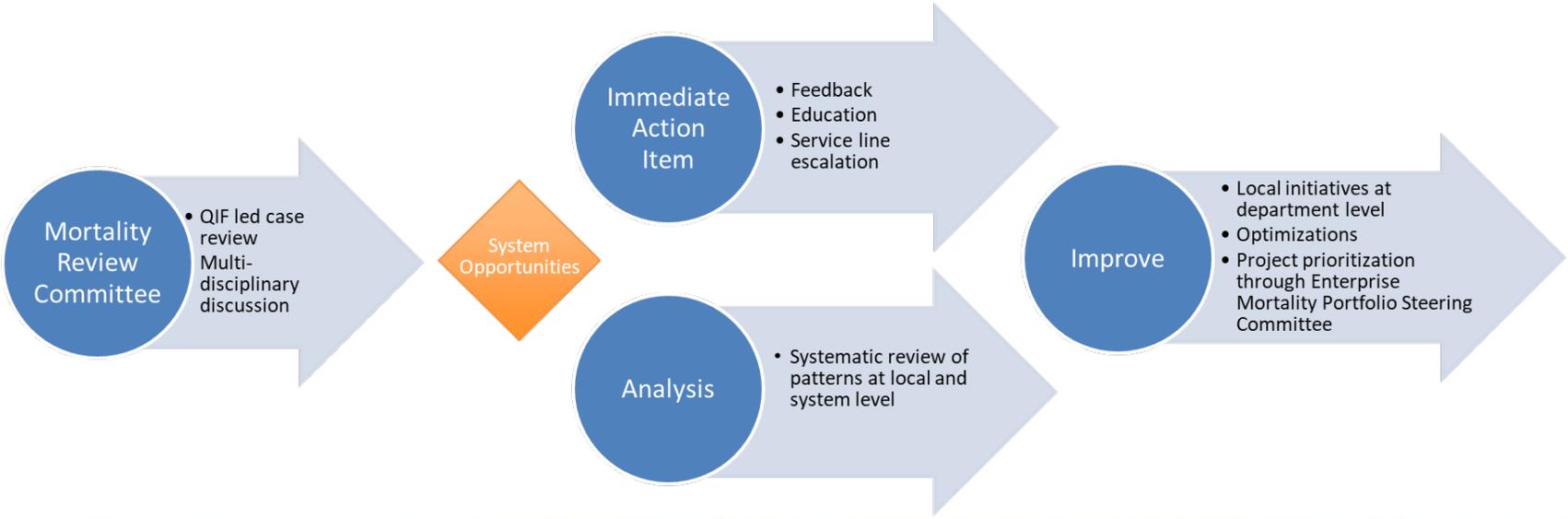
- Objective review of commonly missed DRG related comorbidities
- Generation of a stratified risk score
 - Patients with a score below "Well Above" go through an additional review for clinical opportunities, codes, or POA status
- An additional trigger for interdisciplinary Mortality Review Committee



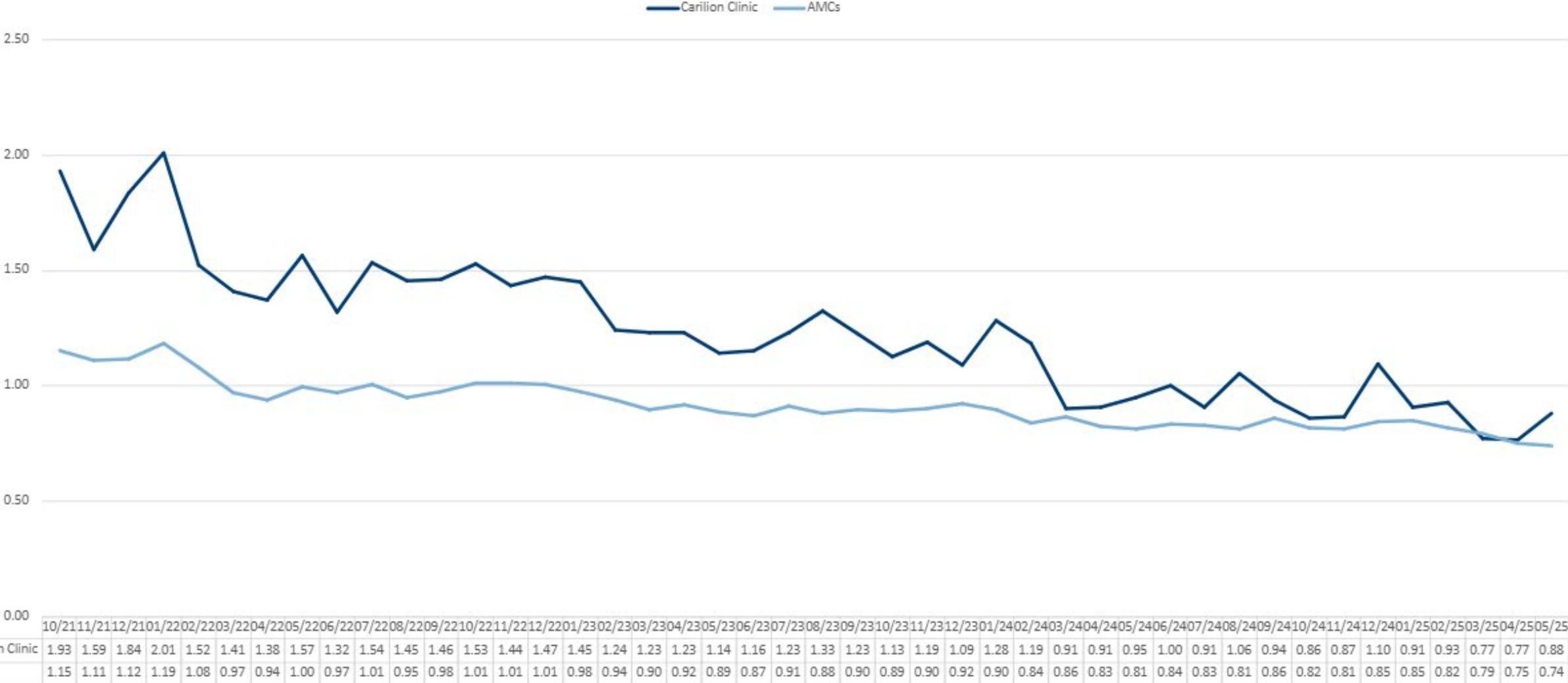
Mortality Review Committee

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)
 - Treatment that is Just, Respect, Understanding and compassionate, Supportive care, and Transparency 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

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?



Contact:

Dr. Suzy Kraemer, mskraemer@carilionclinic.org

Ashli Semones, amsemones@carilionclinic.org

Lara Richards, lkrichards@carilionclinic.org

Branden Robertson, brrobertson@carilionclinic.org