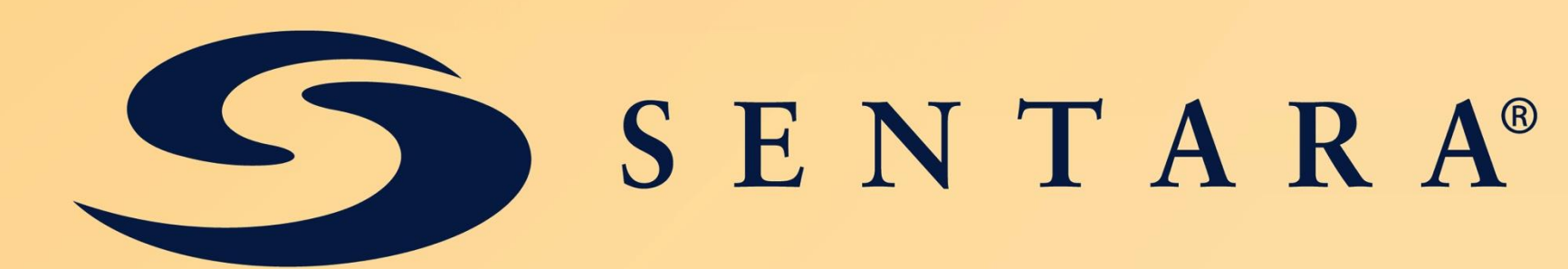




Working Together to Improve STEMI Care:

Beyond the Cath Lab

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Introduction

In 2012, clinical nurses at Sentara Williamsburg Regional Medical Center (SWRMC) identified an opportunity to improve overall care for patients experiencing an ST-Elevation Myocardial Infarction (STEMI). In response to this opportunity, the nurses formed an interdepartmental, interdisciplinary task force to improve performance on several STEMI-related metrics. An interprofessional approach incorporating principles of lean methodology helped to shave critical minutes from time of arrival in the Emergency Department (ED) to arrival in the Cardiac Catheterization Lab and ultimate time to reperfusion. As a result, SWRMC consistently exceeds the national benchmark for STEMI door to balloon time.

Methods

Focus on Community Education/Outreach

- Focus community education efforts on the recognition of signs/symptoms of a heart attack
- Provide education to highlight the importance of calling 911 when experiencing the symptoms of a heart attack

Establish Partnership with Emergency Medical Services

- Partner with local EMS providers to improve STEMI care
- Acquire LIFENET® System to improve field recognition of STEMI, facilitate transmission of electrocardiograms prior to arrival in the ED, and increase field activation of cardiac catheterization lab staff.
- Maintain a false positive activation rate of less than 20%



Improve Throughput from ED to the Cardiac Cath Lab

- Implement lean methodology strategies to improve timeliness of interventions and results
 - Flowchart processes to identify opportunities for improvement
 - Track time measurements
- Implement mock STEMI drills to identify greatest opportunities for improvement
 - Include EMS in mock STEMI drills
 - Involve direct care providers in mock drills and debriefing

Conduct retrospective review of all cases

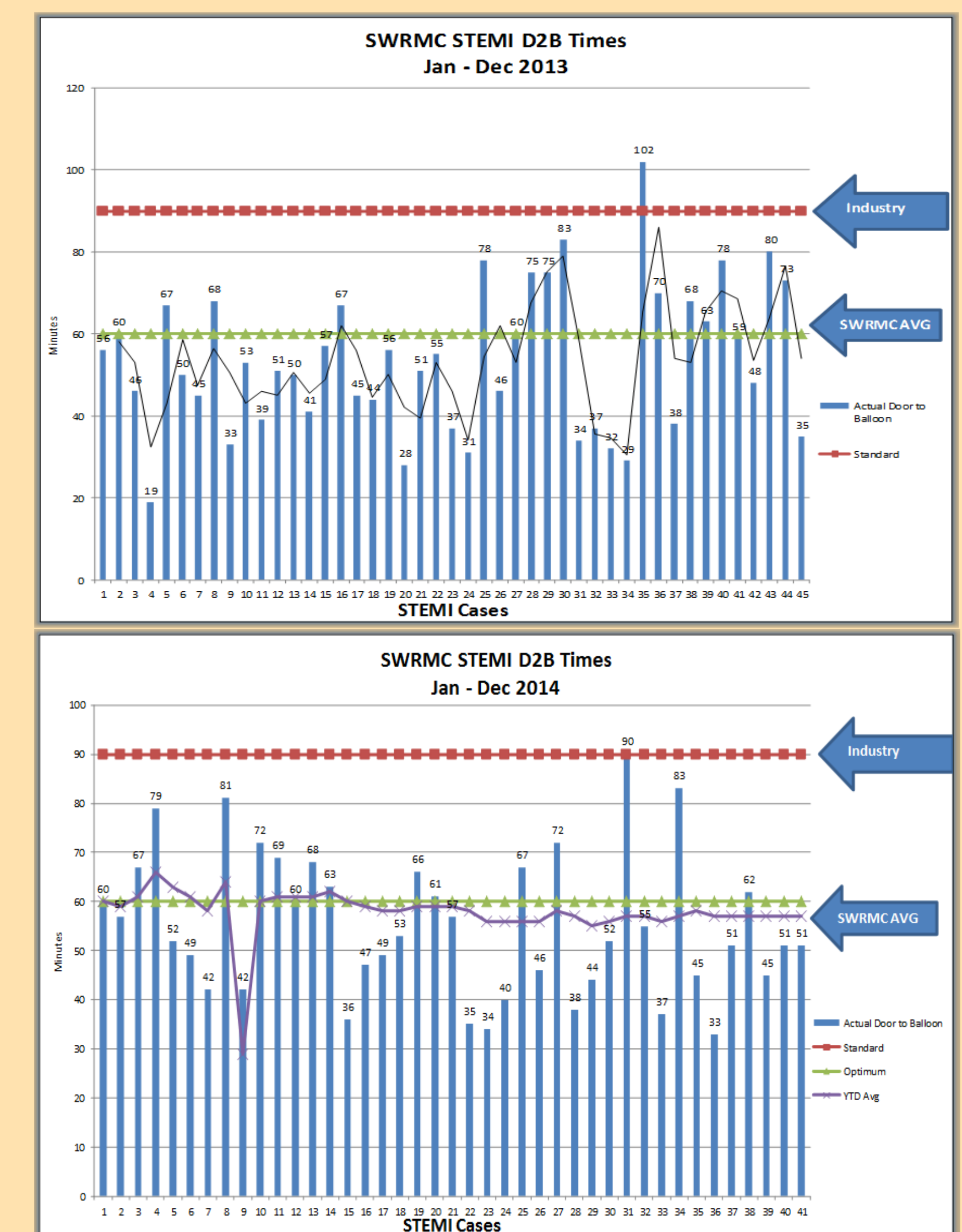
- Receive feedback regarding successes and failures
- Critically evaluate any cases that do not meet established goals



Members of the Cardiac Catheterization Lab Team at SWRMC

Outcomes

Primary Outcome: SWRMC has consistently outperformed the national benchmark for percutaneous coronary intervention within 90 minutes of arrival over the past two years.



Secondary Outcomes:

- Patients with STEMI arriving by EMS increased from 59% to 67%
- Field activation of the STEMI team increased from 75% to 93%
- False activation rate maintained below threshold at 4%
- Average time from arrival in the ED to arrival in the Cardiac Catheterization Lab decreased from 40.5 minutes in 2011 to 34 minutes in 2014; Sustained at 35 minutes 2015 YTD

Conclusion

Nurses who are informed and engaged are key drivers of improved outcomes. In this nurse-led performance improvement initiative, nurses provided the motivation and impetus for sustained change that led to significant improvements in the quality, safety, effectiveness, and efficiency of STEMI care.

As a result, SWRMC has achieved multiple awards and recognition as a STEMI provider:

- 2015 Mission: Lifeline® – GOLD Level Recognition Award
- Society of Chest Pain Centers Accredited
- ACTION Registry – GWTG Platinum Performance Award 2014

Significance

Timely recognition and treatment of patients experiencing a STEMI are critical to saving lives. Successful outcomes are dependent on multiple professionals both within the organization and the community working together in the best interest of the patient. To consistently achieve timely reperfusion, this nurse-led team focuses their attention on community education, community partnerships, and throughput solutions.



Objectives

Primary Objective:

- Consistently meet the industry standard for STEMI reperfusion as measured by the door to balloon time.

Secondary Objectives:

- Increase the percentage of STEMI patients who arrive by Emergency Medical Services (EMS).
- Increase field activation of the STEMI team.
- Decrease time from arrival in the ED to arrival in the Cardiac Catheterization Lab.

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