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Mastering Sepsis Care with Outstanding Results: APRN role in the Virtual Sepsis Unit

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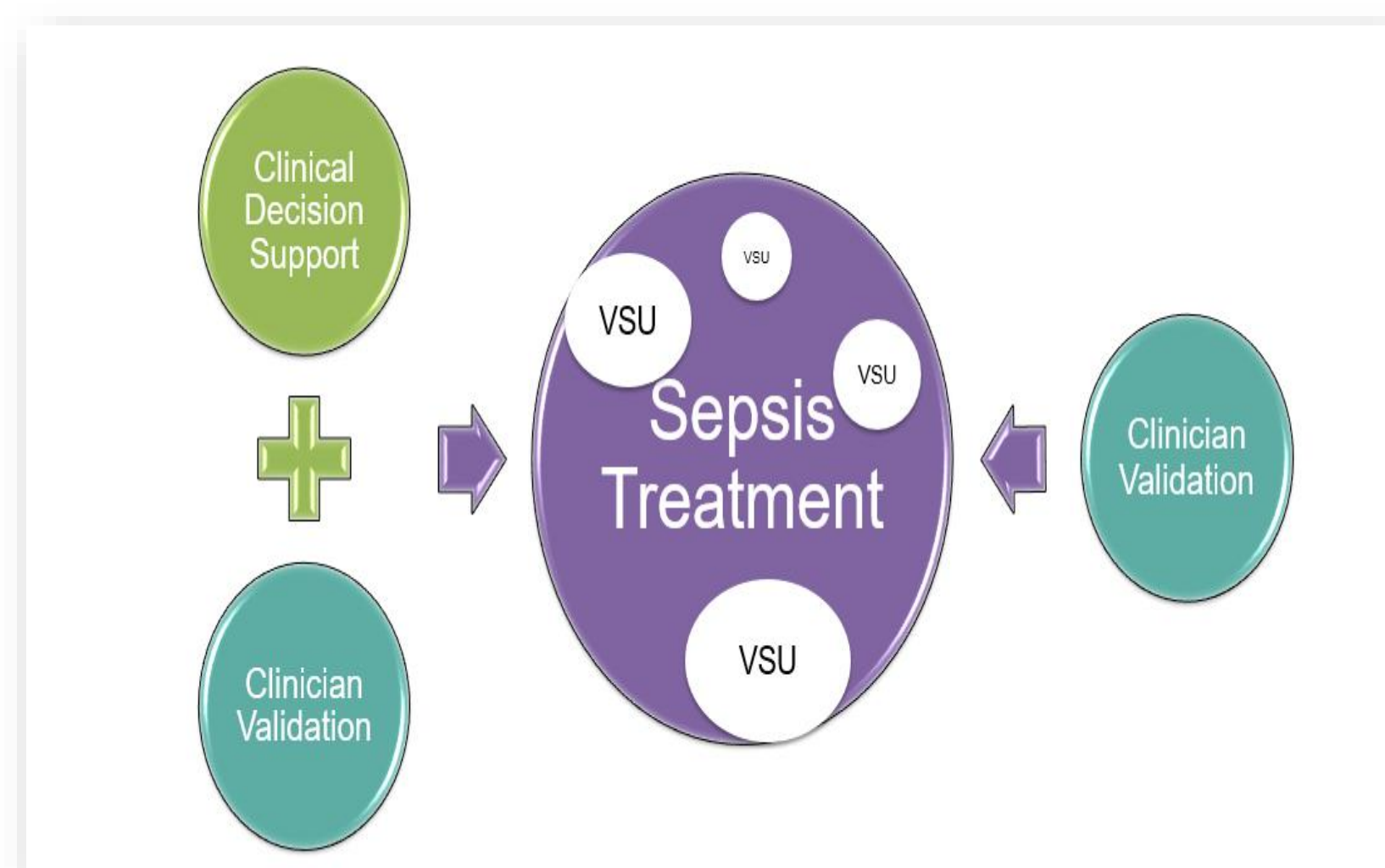
Introduction

Sepsis is a life-threatening condition caused by the body's overwhelming response to infection, which can lead to tissue damage, organ failure, amputations and death.

Early detection is key in sepsis survival.

Evidenced Based Clinical Care (EBCC) Sepsis Steering council sought to addresses inefficiencies in management of sepsis patients across Baptist Health South Florida (BHSF). The goal of the council was to identify workflows to harmonize and coordinate sepsis interventions in order to improve outcomes (mortality and LOS) and adherence to Center for Medicare and Medicaid Services (CMS) Sepsis bundle.

Current evidence demonstrates *that increased compliance with sepsis performance bundles is associated with a 25% relative risk reduction in mortality rate.*

Levy, M. M., Rhodes, A., Phillips, G. S., Townsend, S. R., Schorr, C. A., Beale, R., ... & Dellinger, R. P. (2014). Surviving Sepsis Campaign: association between performance metrics and outcomes in a 7.5-year study. *Intensive care medicine, 40*(11), 1623-1633.

Sepsis: How good are hospitals at treating 'hidden killer'?

By Nick Triggle
Health correspondent

4 July 2019

Sepsis death father: "If my son had been tested he'd still be here"

Patients' lives are being put at risk because of delays giving them treatment for sepsis, experts are warning.

https://www.bbc.com/news/health-48749985

Methods

The tele-ICU is a major resource that BHSF healthcare teams use to leverage limited clinical expertise to support early recognition and treatment of sepsis.

Using existing infrastructure of the tele-ICU, virtual sepsis management was incorporated into exiting workflow. Via the Virtual Sepsis Unit (VSU), APRNs optimize and support ED and inpatient sepsis management and adherence to CMS sepsis guidelines. The VSU APRNs are also a resource of specialty knowledge for providers and nurses caring for sepsis patients system-wide.

VSU Infrastructure and Workflow: Teamwork

- Staffed 24/7
  - APRNs for ED & Med Surg
  - Tele- ICU RN/Physician for ICU/Stepdown
- To support all adult in-patient
- Using alerts triggered in EMR – Cerner
- Harmonized workflow – VSU as resource
- Real-time tracking of sepsis bundle elements

Care while adhering to CMS SEP 1 Bundle requires coordination by clinical experts

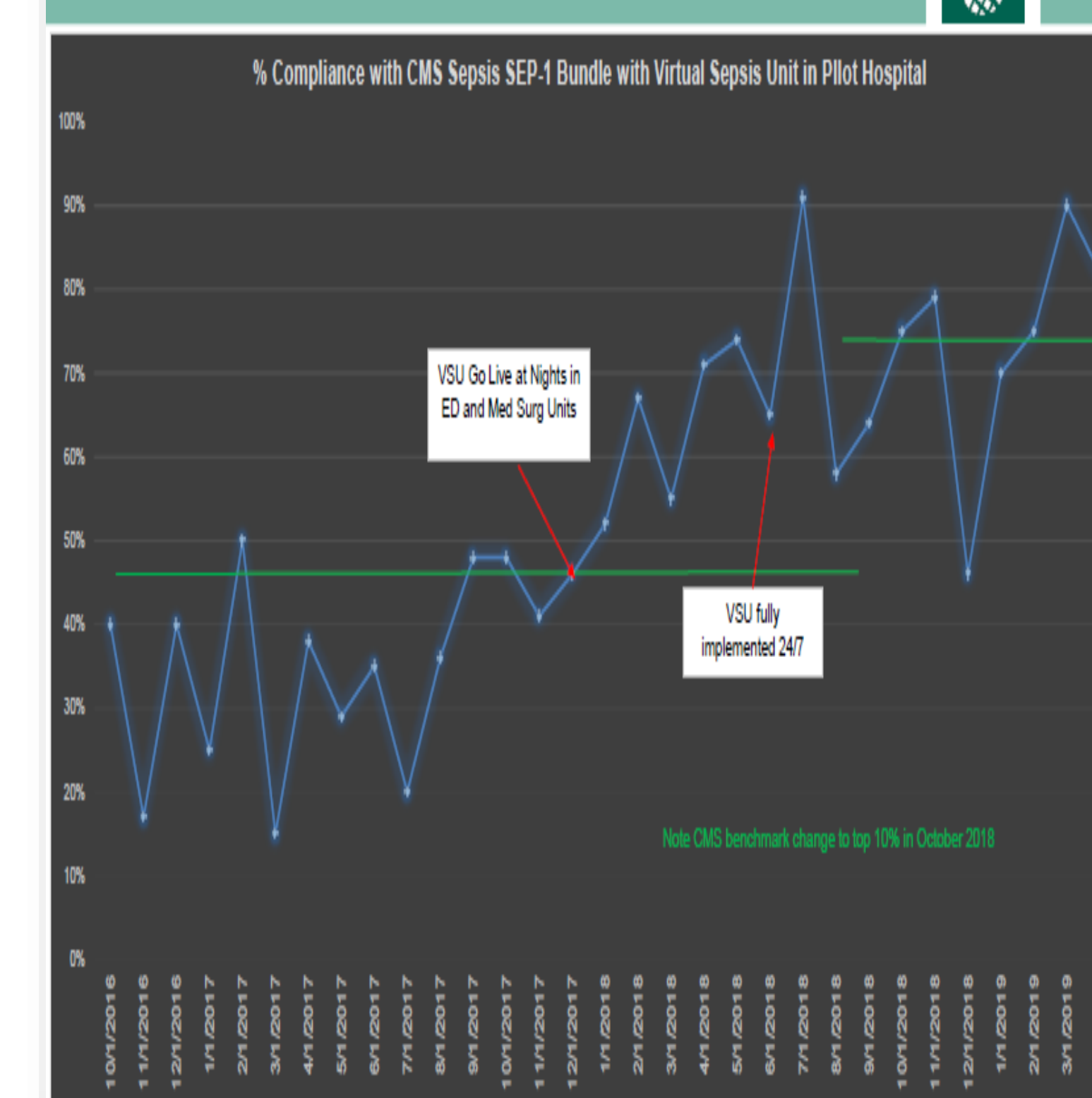**Surviving Sepsis Campaign (2016) Elements:**
- *Sepsis-3 defines organ dysfunction as an increase in the total Sequential [Sepsis-related] Organ Failure Assessment (SOFA) score of 2 points or more from baseline.*
- Start resuscitation early with source control, intravenous fluids and antibiotics.
- Frequent assessment of the patients' volume status is crucial throughout the resuscitation period.
- We suggest guiding resuscitation to normalize lactate in patients with elevated lactate levels as a marker of tissue hypoperfusion.
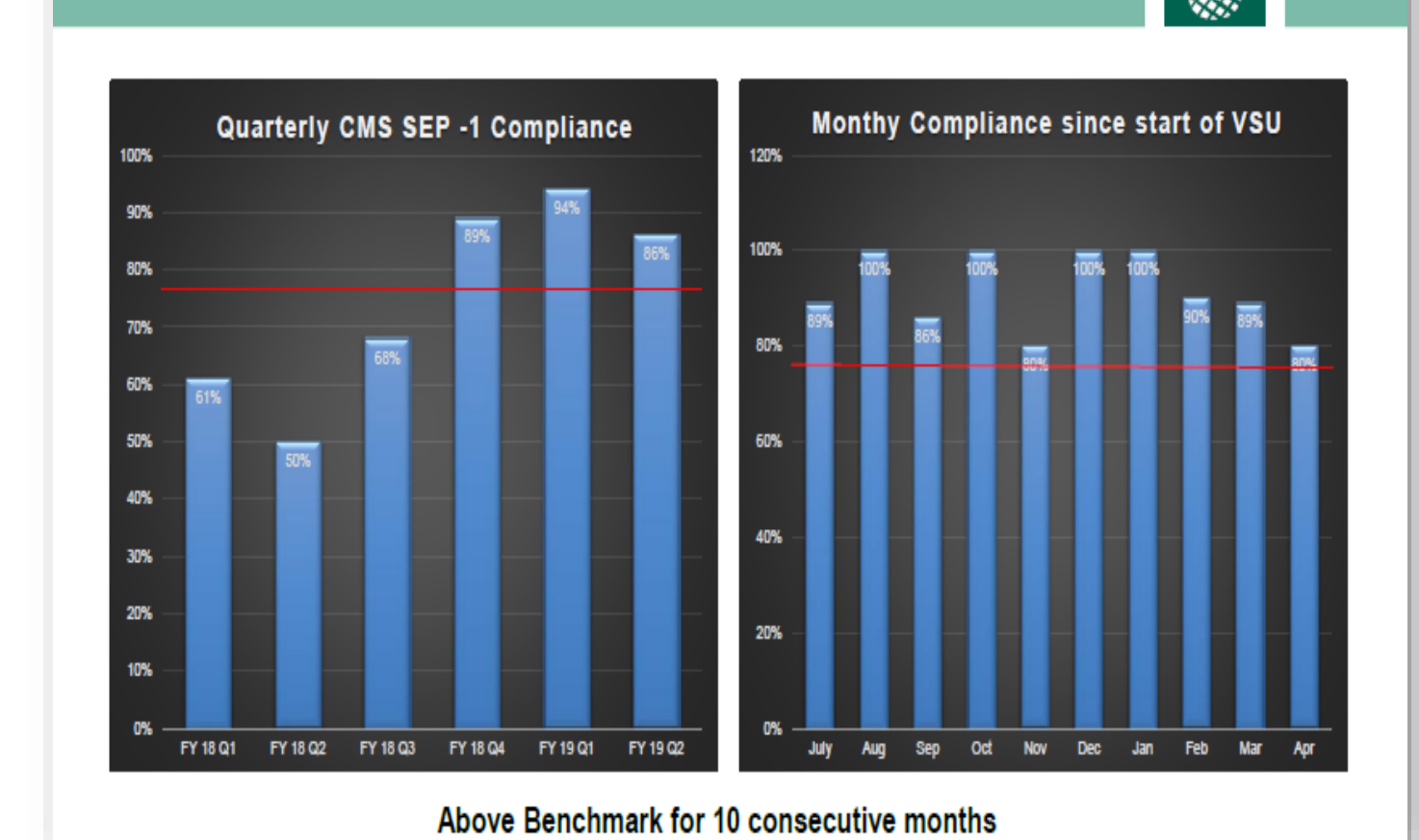
CMS SEP-1 Bundle Elements:
Severe Sepsis documented OR
- 2 SIRS and 1 organ dysfunction (Within 6 hours of each other)
- Within 3 hours of presentation time:
  - Initial Lactate, Blood cultures *prior* to Antibiotics.
  - 30mL/kg fluid (for Lactate >4 AND/OR hypotension)
  - Repeat Lactate (3 hours after initial Lactate)
- Within 6 hours:
  - Sepsis Fluid Resuscitation Assessment
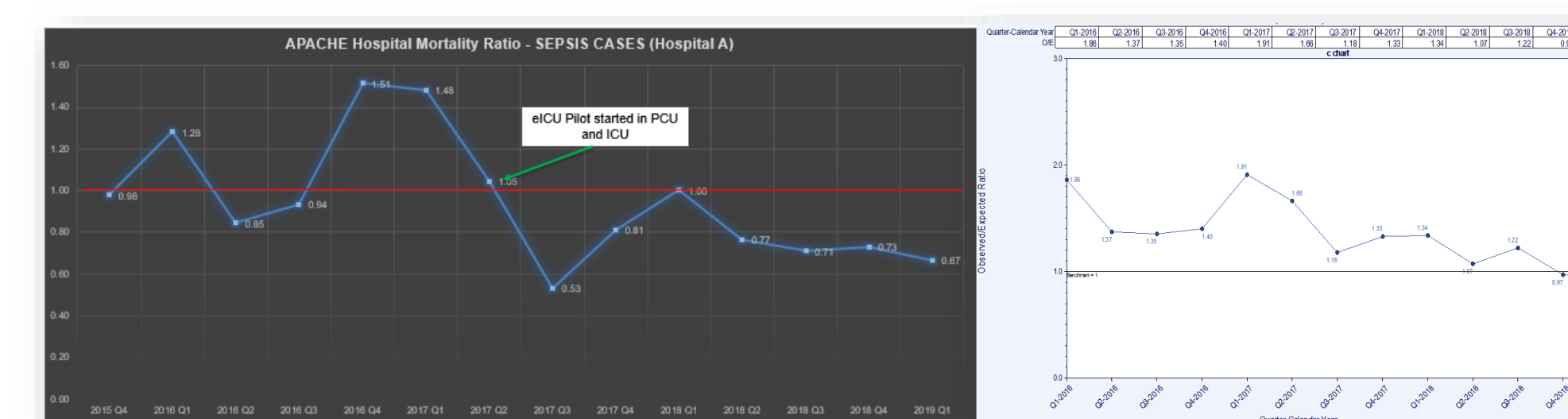 - Vasopressor for refractory hypotension

Results

Outcomes – Virtual Sepsis Unit (Hospital A)
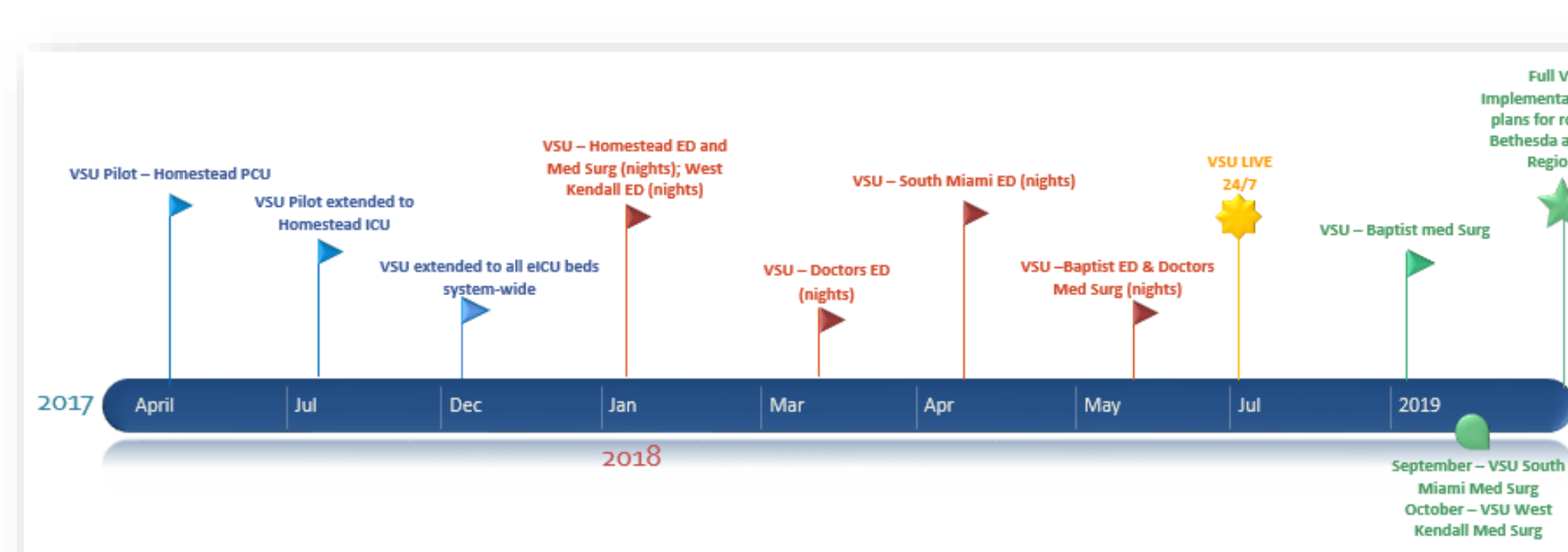Percentage of Sepsis Cases Meeting Bundle Requirements

Outcomes – Virtual Sepsis Unit (Hospital B)
Percentage of Sepsis Cases Meeting Bundle Requirements
Above Benchmark for 10 consecutive months

Reduction in severity-adjusted mortality (APACHE & Premier)

VSU Rollout Timeline

Conclusions

APRN coordination of sepsis management with emphasis on performance improvement can drive change in behavior, improve quality of care, and increase adherence to CMS compliance bundles.
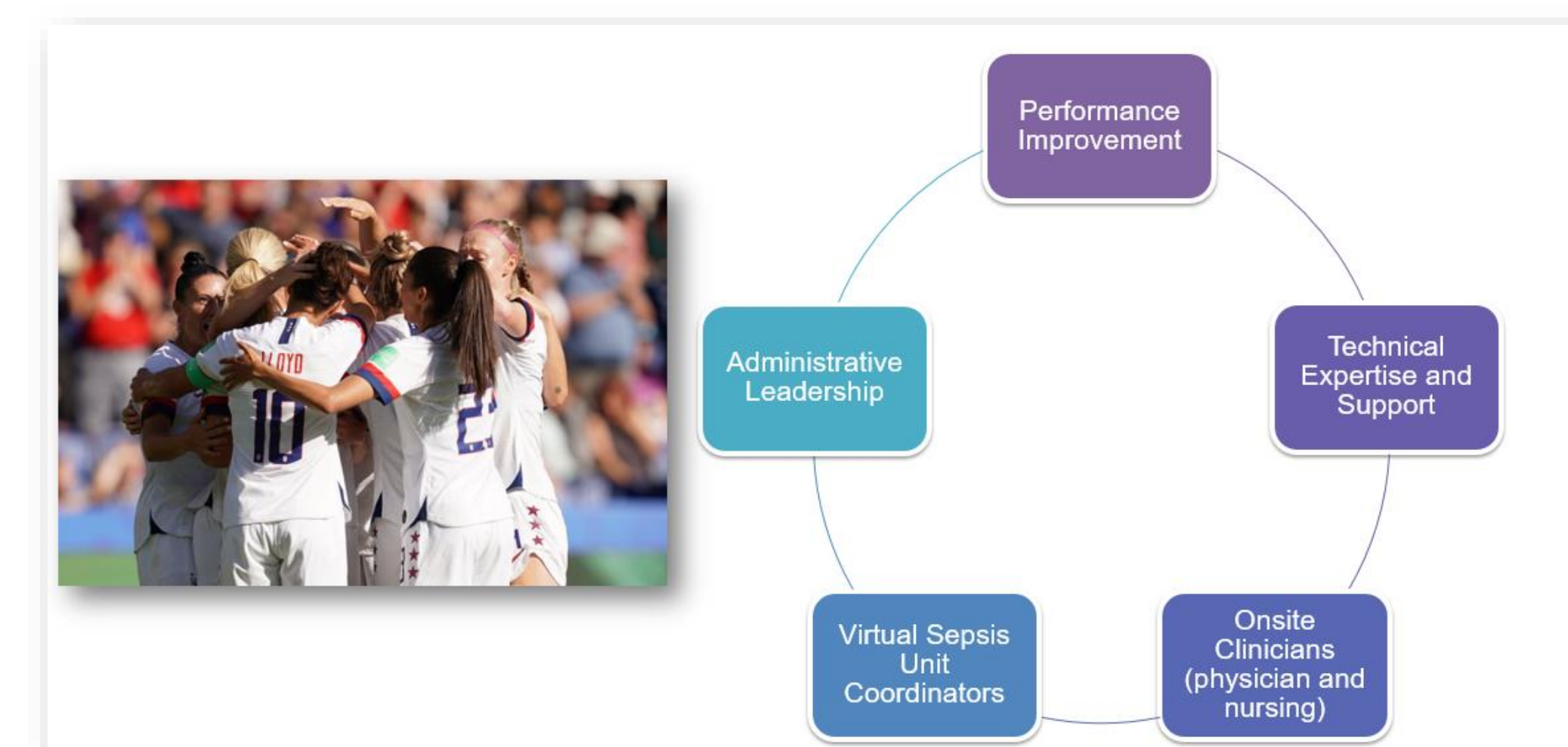
Managing sepsis requires coordinated care that includes:
- Early Recognition
- Early Treatment & Resuscitation
- Clinical coordination by experts in sepsis management
- Compliance with CMS Sepsis Bundle

What success looks like

- Consistent presence of Sepsis coordinators
  - Streamlined workflows
  - Real-time intervention for possible fallouts
- Enhanced collaboration with Providers and RNs
- Improved bedside RN proficiency with Bundle elements
  - Increased level of comfort bundle
  - Education of bedside clinicians
- Early positive outcomes
  - Increased compliance with CMS bundle
  - Decreased mortality

Ongoing multidisciplinary collaboration is a key factor in successful sepsis care.

VSU is here to assist you with any questions Please call 786-527-9802

Baptist Health South Florida
Telehealth Center