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# Project #46: Enhancing the Sepsis Narrator Tool to Improve Patient Care and Outcomes

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# Enhancing the Sepsis Narrator Tool to Improve Patient Care and Outcomes

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WINNER

## PLAN: AIM ABSTRACT

**Background:**
- The SEP 1 bundle is evidence based best practice guidelines for the management of patients with severe sepsis and septic shock. Compliance with SEP 1 bundled care is monitored by CMS and publicly reported. When all required SEP 1 bundle elements are delivered within timing specifications of 3- and 6-hours, patient outcomes demonstrate lower mortality, fewer complications, and a reduction in length of stay.

**Problem statement:**
- At Henry Ford Health (HFH), compliance with the SEP-1 bundle measure was variable, lagging system goals and national benchmarks.
- In May 2019, the EPIC Sepsis Narrator with a built-in checklist of the SEP 1 bundle elements was introduced as a system wide nursing documentation tool. The goal of the tool was to help guide the delivery of care when a code sepsis was initiated. Two years after implementation it was noted that there was variability in documentation tools used during a code sepsis and overall poor compliance of the Sepsis narrator among HFH hospitals.

Sepsis Narrator and Checklist 2019       2 Paper sepsis checklists
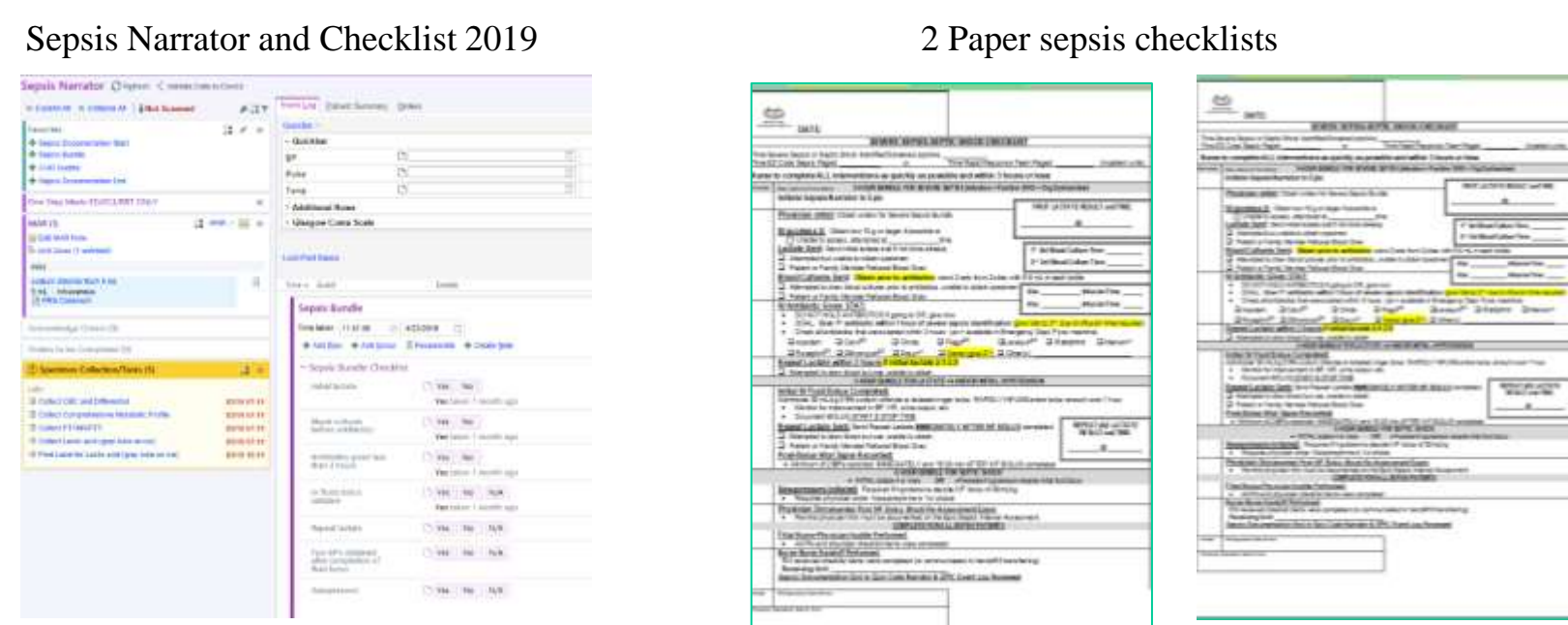
Tools used at HFH hospitals to guide delivery of care during Code Sepsis 2021

**Improvement Goal Statement:**
- Enhance the sepsis narrator to create a standardized, 100% electronic Code Sepsis documentation tool that assists the team with meeting goals of patient care and promotes compliance of CMS SEP 1 Bundle care elements within 6 months.
- Improve HFHS ED Utilization of the tool by 10% within 12 months of implementation.
- Improve HFHS IPD Utilization of the tool by 5% within 12 months of implementation.

## PLAN: CURRENT STATE

**Current state:**
- The SEP 1 bundle element are complex requiring a combination of diagnostic and intervention steps.
- Throughout HFH the largest population of sepsis patients are identified and treated in the Emergency department.
- Data trends specific to HFH Detroit campus ED January – December 2021, revealed a positive correlation between utilization of the sepsis narrator tool and 3-hour bundle compliance (Figure 1).
- Average utilization of the sepsis narrator in HFHS Emergency Departments (ED) combined was 14%, and 3% in the In-Patient departments (IPD) (Figure 2).
- The highest utilization January to December 2021, was 18% in the ED and 6% in the IPD.
- Contributing to the overall poor compliance was variability of documentation tools amongst HFH Hospitals. Henry Ford Detroit, West Bloomfield and Macomb promoted the use of the EPIC sepsis narrator checklist, while Henry Ford Jackson and Wyandotte utilized a paper format.

Figure 1
HFH Sepsis Narrator Utilization and 3-Hour Bundle Compliance

% Patients Where Sepsis Narrator was Opened    Figure 2
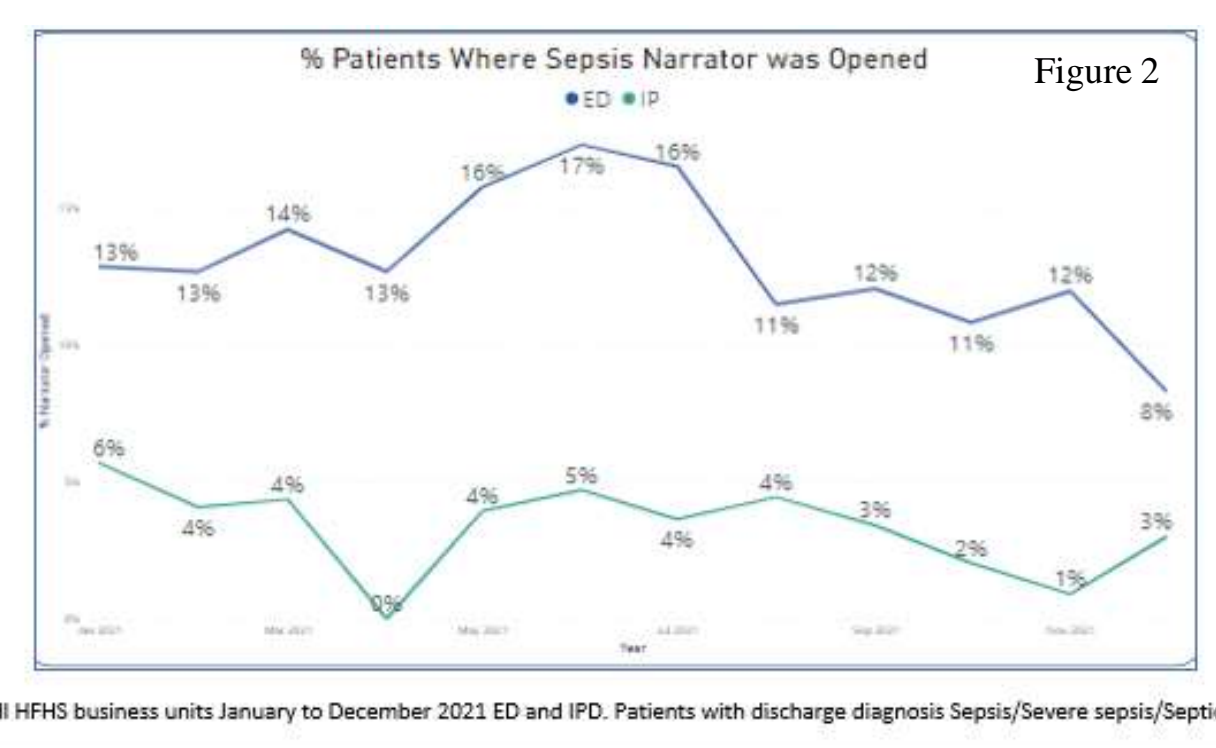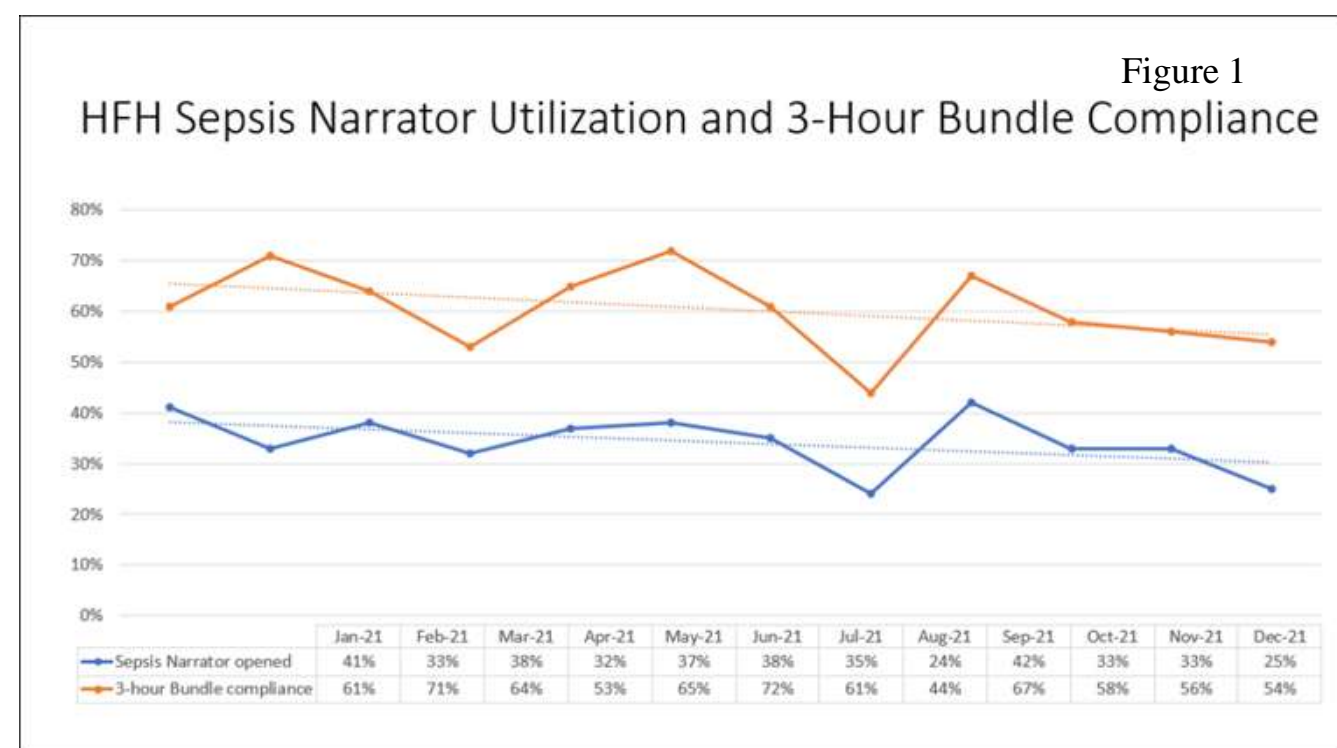
**Problem Analysis:**
- Henry Ford Jackson and Wyandotte hospitals had success with a paper checklist to assist the code sepsis teams with meeting goals of care and were reluctant to move to an electronic format.
- Feedback was solicited across HFH from end users and sepsis coordinators to identify barriers and included:
  - Does not align with RN workflow and difficult to navigate.
  - Checklist was often used as a checkoff rather than checklist tool.
  - Not intuitive, offers little guidance: *Sepsis is not one size fits all, the sepsis narrator does not provide guidance for next steps, what and when bundle elements are required.*
  - No timer: *Sepsis care has timing specifications, no way to keep track of time start or end.*
  - Requires additional documentation : *Yes - no responses only, additional documentation is required to meet CMS SEP 1 guideline requirements.*

**Plan:**
- Using the barriers identified by the end users as opportunities for improvement and the paper format checklist as a guide, HFH sepsis program EPIC taskforce Sepsis Coordinators partnered with a Helios design team to develop an enhanced Sepsis Narrator.
- Collaboration between the teams occurred via a virtual platform (Microsoft Teams ®).

## DO: CORRECTIVE ACTIONS / INTERVENTIONS

- Sepsis coordinators attended monthly meetings for updates to changes and opportunity to provide feedback.
- The enhanced sepsis narrator tool was moved to a test environment to allow hospital sepsis coordinators and ED RNs to test the build and confirm functionality as intended.
- An implementation and education work plan was developed to assist with tracking tasks, target dates and next steps from April 2021 to September 2022.
- Presentations to multiple stake holders for endorsement and feedback resulted in several tool revisions to align with nursing workflow and promote utilization in both the ED and IPD.

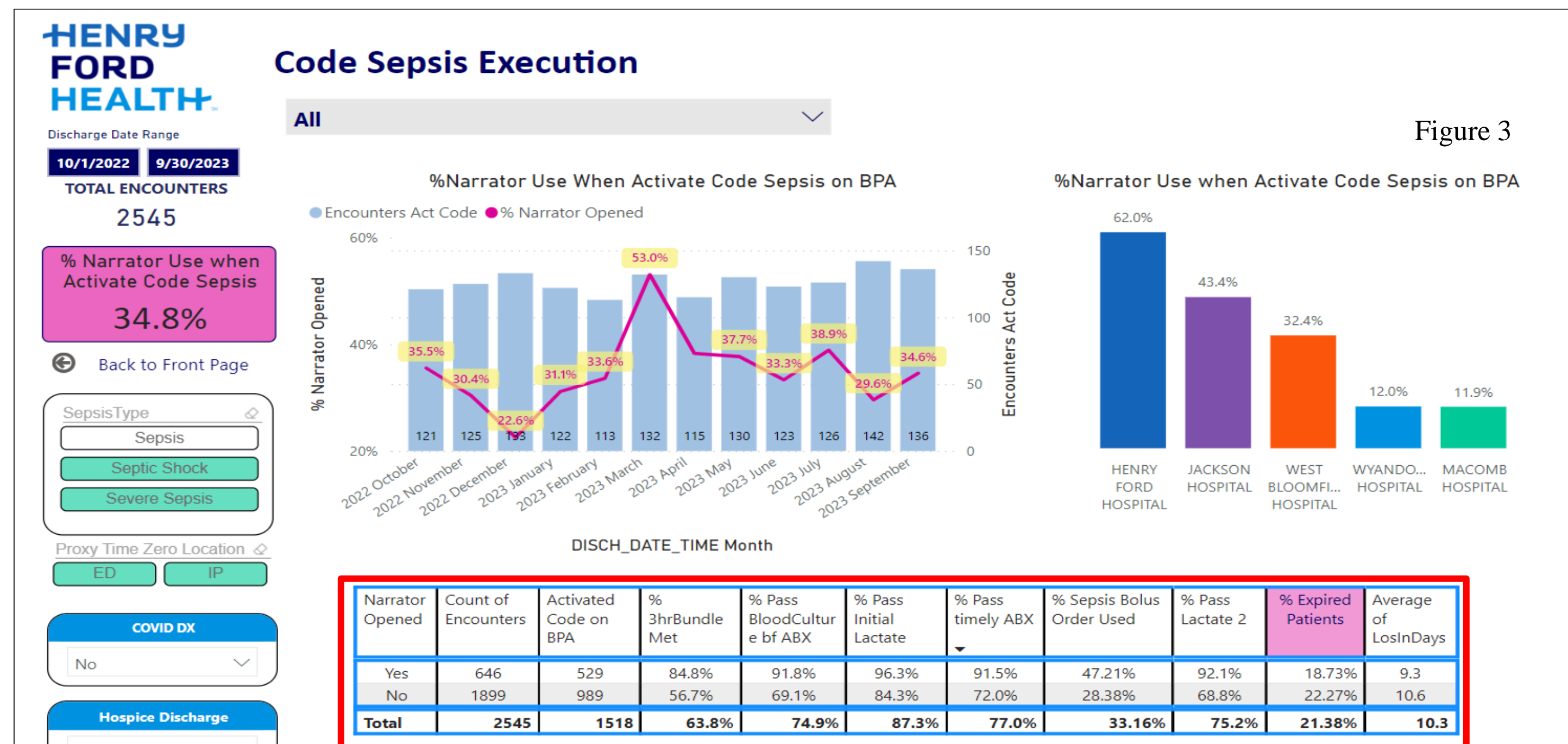Highlights of the Final Enhanced Sepsis Narrator tool include:
  - Electronic tool that mimics a paper checklist.
  - Checklist rows identify the 3-and 6- hour bundle elements and provide guidance for next steps.
  - Color coded rows provide a quick assessment of bundle elements that are completed and outstanding.
  - Drop down boxes allow SEP-1 defined documentation opportunities regarding timing, refusals, and delays.
  - Red alerts notify the team that the patient requires additional assessment.
  - Documentation of code sepsis start prompts a code sepsis timer.
  - Links in sepsis narrator to facilitate quick access to the sepsis checklist.
  - The sepsis narrator *travels* with the patient to assist with hand off and transitions of care. The ED or IPD nurse both see the same checklist and can quickly identify completed bundle elements.
  - Includes a link to the sepsis report which provides a quick look of sepsis specific care including labs, antibiotics and crystalloid fluid administration, as well as the sepsis timer. The sepsis report tool is accessible to the provider.

- EPIC sepsis taskforce team members collaborated with Helios instructional design team members to develop ED and IPD versions of tip sheets and E-Learning modules.
- Education was available for distribution to RNs 30 days prior to implementation.
- Implementation Go Live Dates were announced via emails and Unit Huddles.

## CHECK  (EVALUATION OF CHANGES)

- Measure: Utilization of the sepsis narrator tool.
- The EPIC Sepsis Narrator is the standard tool for documentation of a code sepsis across all HFH hospitals.
- Since implementation, the HFH sepsis dashboard reveals an upward trend in utilization across all HFH hospitals.
- Use of the Sepsis Narrator is associated with an improvement in bundle compliance and patient outcomes. (Figure 3).
- The project goal was a 10%  improvement in utilization amongst HFHS EDs and 5% for IPDs 12 months post implementation.
  - Prior to enhancement ED average = 13%, IPD average = 3%
  - 12-months post enhancement sepsis narrator tool implementation ED average = 23.5% (figure 4), IPD = 5.8% (figure 5).
  - The highest utilization October 2022 to September 2023 was 30.3% in the ED and 12% in the IPD, compared to 18 and 6% respectively in 2021.

## MEASURES

**Code Sepsis Execution**

Discharge Date Range
10/1/2022  9/30/2023
TOTAL ENCOUNTERS
2545

% Narrator Use when Activate Code Sepsis
34.8%

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Figure 3

%Narrator Use When Activate Code Sepsis on BPA
● Encounters Act Code  ● Narrator Opened

%Narrator Use when Activate Code Sepsis on BPA

DISCH_DATE_TIME Month

| Narrator Opened | Count of Encounters | Activated Code on BPA | % 3hrBundle Met | % Pass BloodCulture bf ABX | % Pass Initial Lactate | % Pass timely ABX | % Sepsis Bolus Order Used | % Pass Lactate 2 | % Expired Patients | Average of LosInDays |
|---|---|---|---|---|---|---|---|---|---|---|
| Yes | 646 | 529 | 84.8% | 91.8% | 96.3% | 91.5% | 47.21% | 92.1% | 18.73% | 9.3 |
| No | 1899 | 989 | 56.7% | 69.1% | 84.3% | 72.0% | 28.30% | 68.8% | 22.27% | 10.6 |
| Total | 2545 | 1518 | 63.8% | 74.9% | 87.3% | 77.0% | 33.16% | 75.2% | 21.38% | 10.3 |

**Use of the Sepsis Narrator with the Code Sepsis process improves 3-hour bundle compliance and patient outcomes.**

% Patients Where Sepsis Narrator was Opened    Figure 4: ED
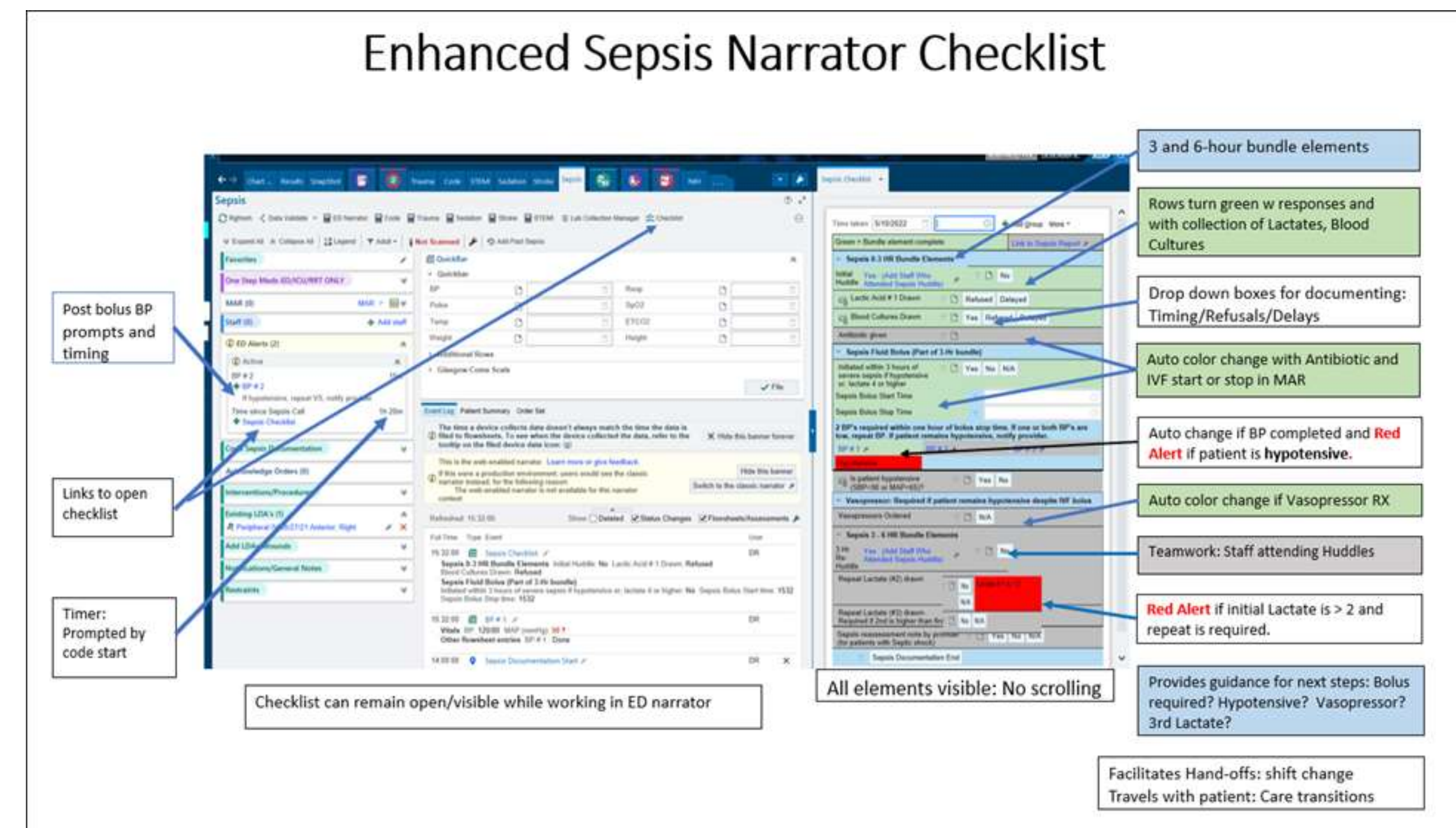
% Cases Narrator Opened    Figure 5: IPD
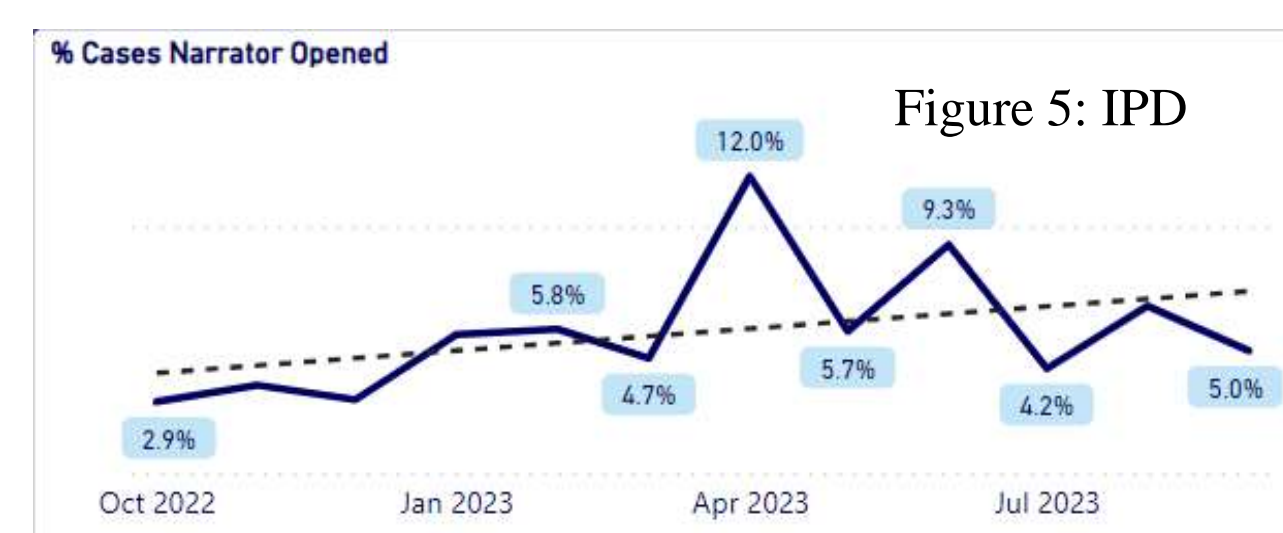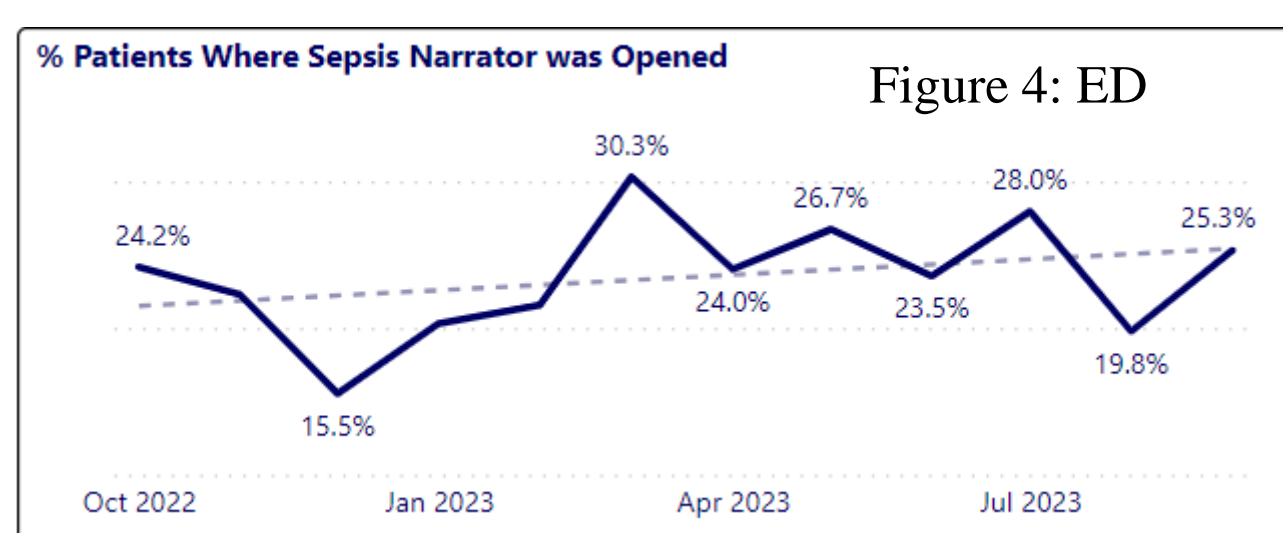
All  HFH Hospitals, October 2022 to September 2023, patients with discharge diagnosis sepsis, severe sepsis, shock
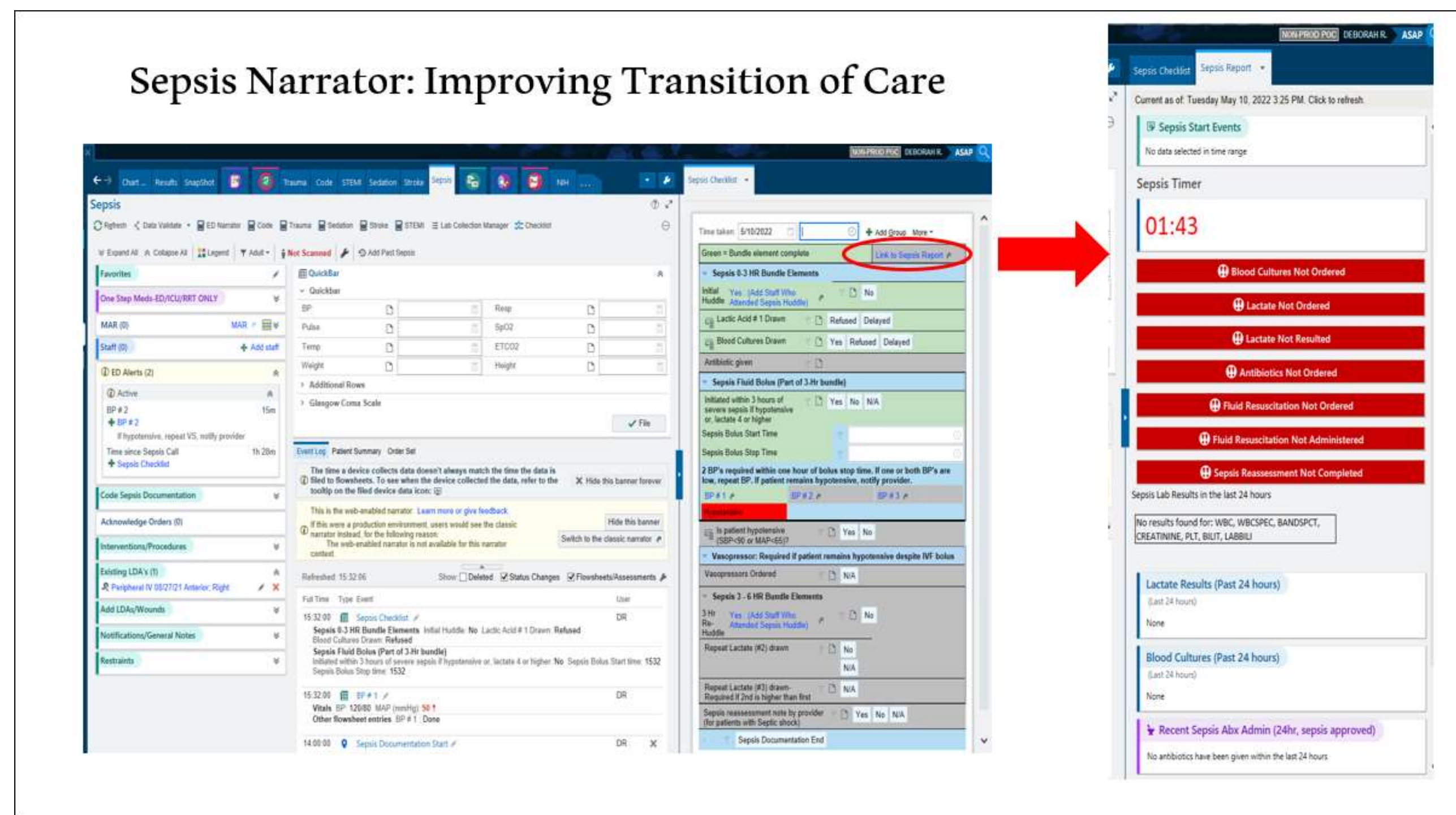
## ACT:  SUSTAIN AND SPREAD

- The sepsis narrator is used as a marker of activation of the code sepsis process.
- Utilization metrics are incorporated as a part of the HFH sepsis program process metrics and shared in monthly score cards for each hospital.
  - Scorecards are distributed to key stakeholders and shared at individual hospital sepsis meetings.
- Education is assigned in RN New Hire Orientation and EPIC Training courses.
- HFH Detroit Sepsis coordinators provide continued education and promote awareness of the tool during weekly rounding.
- HFH Sepsis Program team members maintain regular review of performance and enhancement.
- Ongoing work to continue to improve utilization of the sepsis narrator tool in HFH IPDs includes continued collaboration with nursing education committees and rapid response teams.
- Goals for Code Sepsis in the pregnant patient population include incorporating the sepsis narrator into the process.
- The tool was shared with healthcare team members from national hospital systems participating in the AIMS study collaborative as a tool to assist with improvement goals when caring for patients with sepsis.

## FINAL PRODUCT

**Enhanced Sepsis Narrator Checklist**

Post bolus BP prompts and timing

Links to open checklist

Timer: Prompted by code start

Checklist can remain open/visible while working in ED narrator

3 and 6-hour bundle elements

Rows turn green as responses and with collection of Lactates, Blood Cultures

Drop down boxes for documenting: Timing/Refusals/Delays

Auto color change with Antibiotic and IVF start or stop in MAR

Auto change if BP completed and **Red Alert** if patient is **hypotensive.**

Auto color change if Vasopressor RX

Teamwork: Staff attending Huddles

**Red Alert** if initial Lactate is > 2 and repeat is required.

All elements visible: No scrolling

Provides guidance for next steps: Bolus required? Hypotensive?  Vasopressor? 3rd Lactate?

Facilitates Hand-offs: shift change Travels with patient: Care transitions

**Sepsis Narrator: Improving Transition of Care**

## KEYS TO SUCCESS AND LESSONS LEARNED

**Keys To Success:**
- Frequent touch base with key groups of RN end-users facilitates utilization, provides on-going education opportunities and promotes feedback.
- Building a foundation of sepsis awareness is key to the implementation of the Code Sepsis process and ultimately utilization of the Sepsis Narrator tool.
- Audit and feedback promotes an awareness of compliance with the tool across HFH.
- Emphasizing the impact on patient outcomes enhances end user buy in.

**Lessons Learned:**
- Ensuring input from multiple stakeholders led to an optimized version of the narrator tool.
- Leadership support is vital to shift culture.
- Education needs of the tool to RNs (IPD, ED and RRT) are all unique in time, resources and collaboration.