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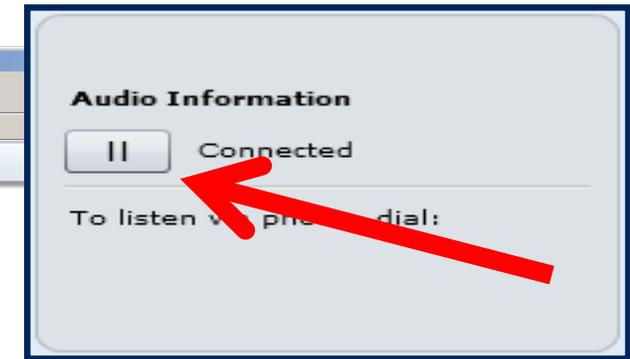
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Audio from computer speakers breaking up?
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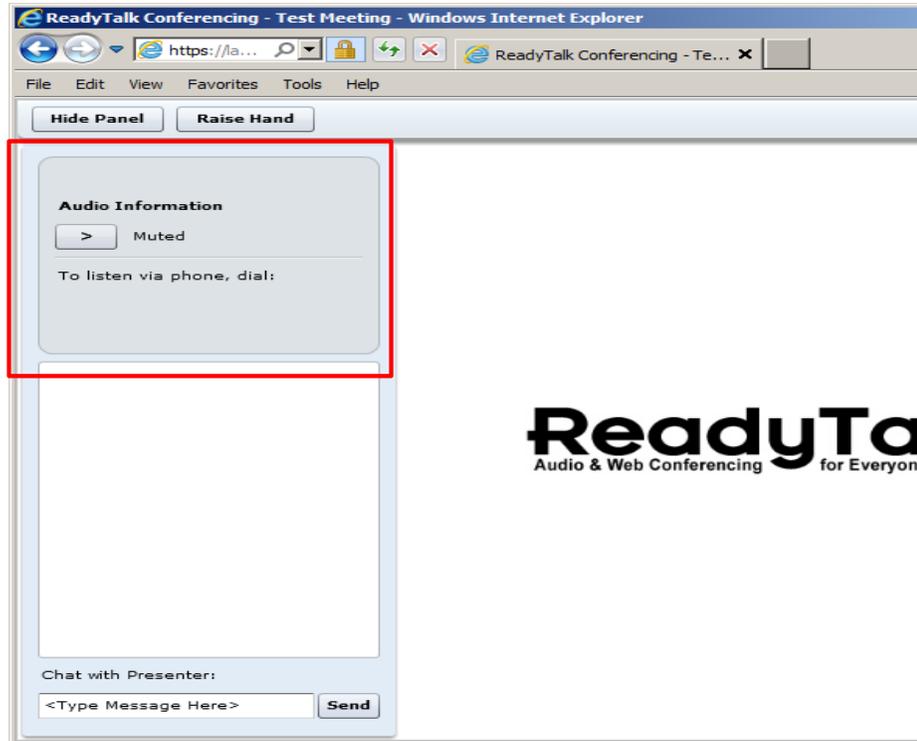
Location of Audio Controls

Step 1

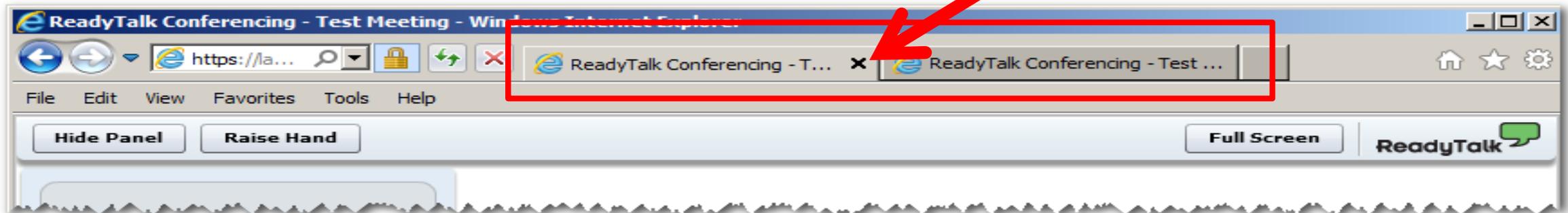**Step 2**

Troubleshooting Echo

- **Hear a bad echo on the call?**
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Example of Two Browsers Tabs open in Same Event

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Submitting Questions

Type questions in the "Chat with Presenter" section, located in the bottom-left corner of your screen.

SSM Health's Sepsis Core Measure Journey

CMS Webinar
November 10, 2015

Michael J. Walter, MD, FACP, FCCP, CPE
Advanced ICU Care®, Chairman Critical Care Medicine
SSM Health DePaul Hospital
Saint Louis, Missouri

Disclosures & Program Outline

Michael J. Walter, MD, FACP, FCCP, CPE

Disclosures: Employee of Advanced ICU Care®

Conflict of Interest: None

| Incorporating the Evidence-Based Guidelines into Clinical Workflows | EHR Support of the Clinical Workflows and SEP-1 Compliance | Education: SEP-1 Interventions, Workflows, and EHR Changes | Data Monitoring to Improve SEP-1 Compliance |

Learning Objectives

- Understand the relationship between evidence-based sepsis guidelines and the new CMS SEP-1 interventions in order to develop <u>new clinical workflows</u>

- Identify ways to utilize an <u>electronic health record</u> to better comply with the CMS SEP-1 interventions

- Identify various methods to <u>educate</u> staff in order to comply with the new CMS SEP-1 interventions

- Create and utilize SEP-1 <u>performance reports</u> to increase compliance and identify opportunities for improvement

Acronyms

- **APN**　　　　Advanced Practice Nurse
- **ARISE**　　　Australasian Resuscitation In Sepsis Evaluation
- **BPA**　　　　 Best Practice Advisories
- **CMS**　　　　Centers for Medicare & Medicaid Services
- **CQI***plus*　　Continuous Quality Improvement Plus
- **CVP**　　　　Central Venous Pressure
- **ED**　　　　 Emergency Department
- **EGDT**　　　Early goal directed therapy
- **EHR**　　　　Electronic Health Record
- **ICU**　　　　Intensive Care Unit
- **IV**　　　　　Intravenous
- **MAP**　　　　Mean Arterial Pressure
- **PA**　　　　　Physician's Assistant
- **ProCess**　　Protocol-based Care for Early Septic Shock
- **ProMISE**　　Protocolised Management in Sepsis
- **SEP**　　　　Sepsis
- **SSC**　　　　Surviving Sepsis Campaign
- **STEMI**　　　ST-segment elevation myocardial infarction

SSM Health - Who We Are

- One of the largest Catholic health care systems in the United States
- Founded by the Franciscan Sisters of Mary in 1872
- Non-profit organization
- Operates in Illinois, Missouri, Oklahoma & Wisconsin
  - 19 hospitals
  - Headquartered in St. Louis
  - 4,220 total licensed beds
  - Approximately 145,000 inpatient admissions annually
- 30,000 employees & 7,000 physicians
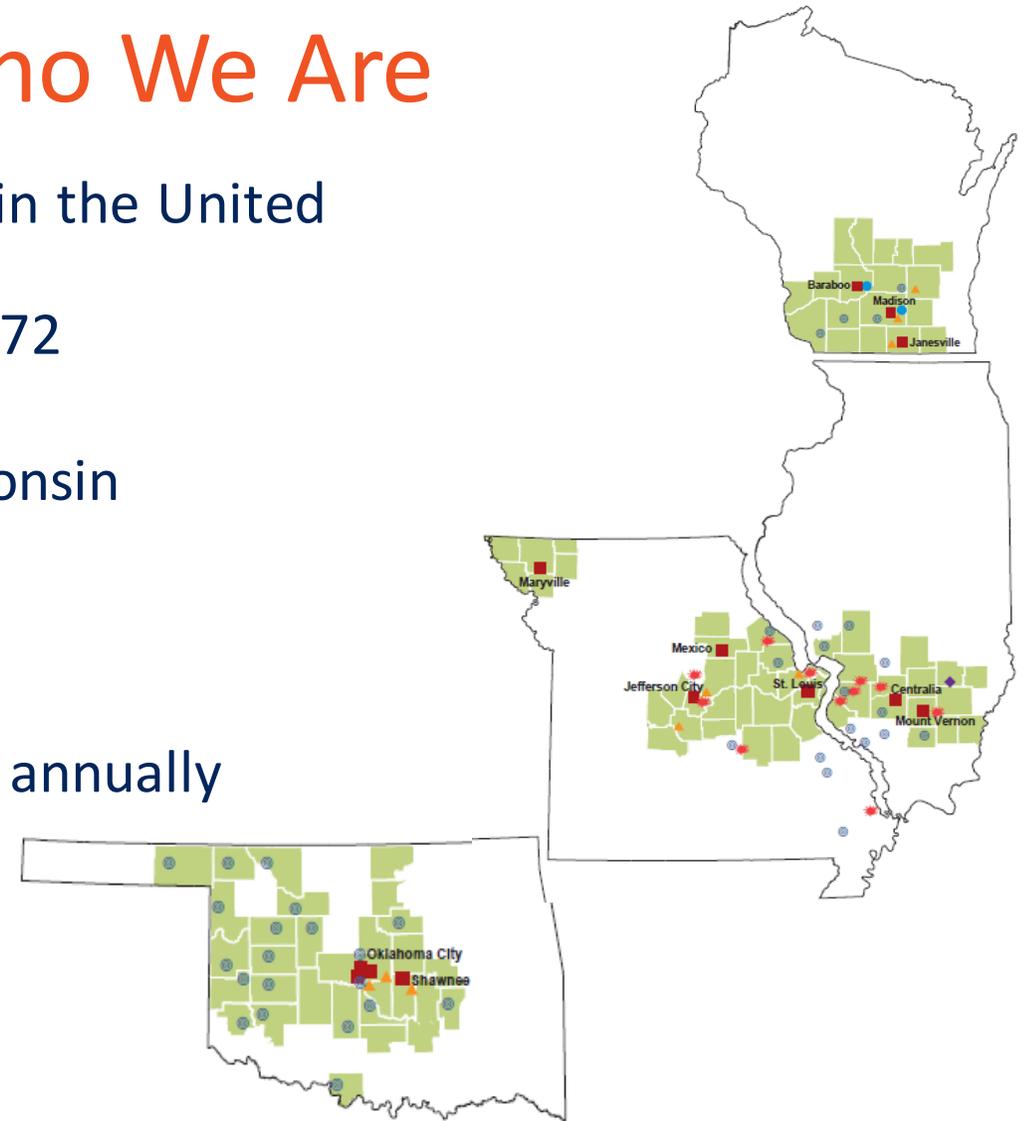
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SSM Health – Who We Are

Organizational Structure: System-level, regional networks, and individual hospitals
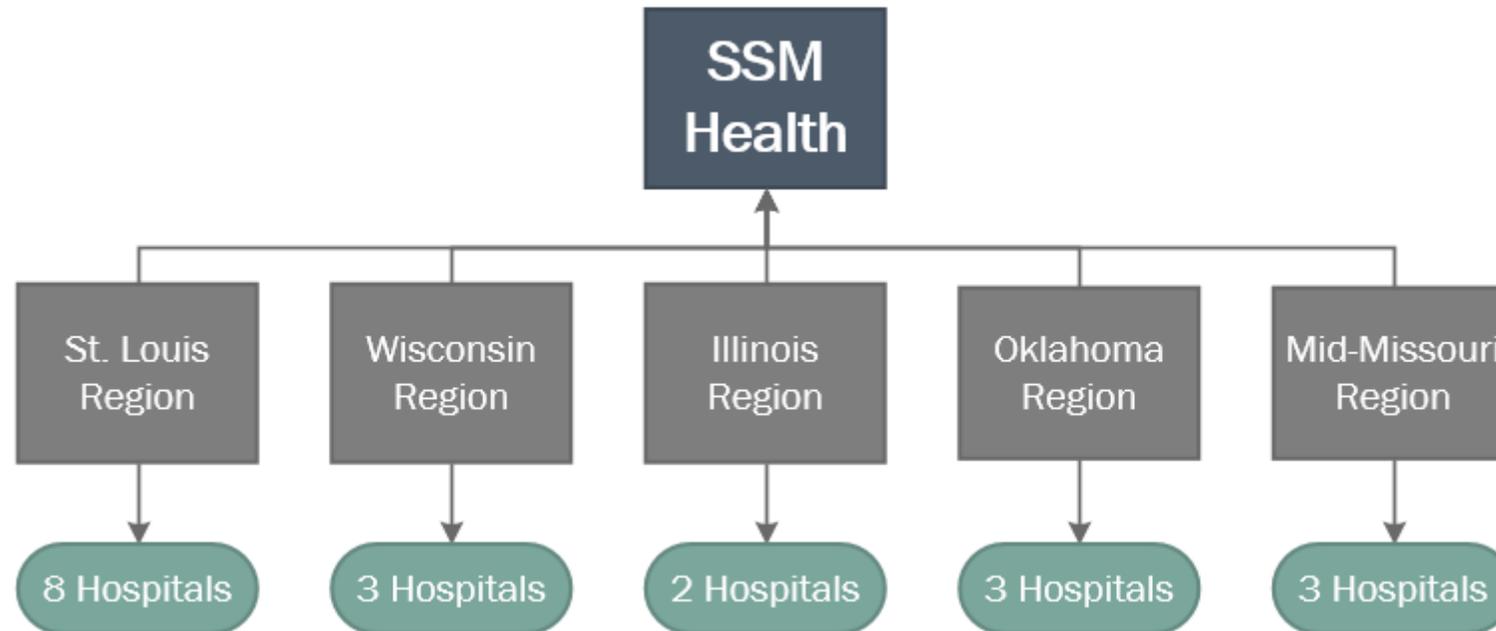
Overview and History of Sepsis Treatment

- **Golden Age of Germ Therapy (1800s):** Hand washing, aseptic technique, Pasteur, Koch
- **1929:** Fleming discovers penicillin
- **1950:** Endotoxin and interferon
- **1970-1980s:** Hemodynamics of shock
- **1980s-present:** Clinical trials
- **2001:** Surviving Sepsis Campaign (SSC) formed
- **2001:** Early goal directed therapy (EGDT)

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Current Sepsis Treatment

- SSC guidelines: 2004, 2008 and 2012

- March 2014: ProCESS trial

- October 2014: ARISE trial

- April 2015: ProMISe trial

- April 2015: SSC bundle update

- October 2015: CMS SEP-1 implementation

Comparison of SSC Update and SEP-1 Interventions

Intervention	4/15 SSC Update	SEP-1
Lactic acid	Yes	Yes
Blood Culture	Yes	Yes
Antibiotics	Yes	Yes
IV fluids (30 ml/kg)	Yes	Yes
Pressors (MAP <65)	Yes	Yes
If MAP < 65 reassess volume status	Yes	Yes
Repeat lactic acid	Yes	Yes

Local: SSM Health – DePaul Hospital

- 2009: ED and ICU Medical Director collaboration
- 2010: Formalized treatment philosophies, education, and data collection
- 2011: Internal intensivist improvement metric
- 2012: Sepsis workgroup with monthly meetings
- 2013: Inpatient screening research project
- 2014: Sepsis tracking tool research project
- 2015: Ongoing process improvement and implementation of regional and system recommendations

Regional: SSM Health – St. Louis

- **2011:** Standing agenda item on St. Louis Critical Care Collaborative monthly meeting
- **2011:** St. Louis Sepsis Steering Team (multi-disciplinary team)
- **2012:** Steering Team recommendations released
- **2012:** Sepsis Summit I
- **2013:** Sepsis metrics included in contracts
- **2013:** Sepsis Summit II
- **2015:** Ongoing process improvement and implementation of local and system recommendations

System: SSM Health

- 2011: CQI*plus* research study
- 2013: System Sepsis Team
- 2013: Patient-specific and System scorecards
- 2013: Inpatient screening research project
- 2014: ED symptom-based screening
- 2014: Bundle compliance tracking tools in ED and ICU
- 2015: Sepsis Summit III
- 2015: Ongoing process improvement and implementation of local and regional recommendations

2015 SEP-1 Implementation: System-Level Approach

- System Sepsis Team
  - Clinical focus
  - Facilitation of the EHR updates
  - Collaboration with other System Teams
- System Sepsis Core Measure Task Force
  - Quality/core measure focus: standardized abstraction paper tool development
  - Gap analysis of existing workflows
  - Education development: abstractors and clinicians

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EHR Update Overview

- Triage/Admission: Screen for infection

- Best Practice Advisories (BPA): ED Nurses and physicians

- Order sets: ED and inpatient

- Documentation: 6-hour Focused Exam Note Template

- Tracking methods for accurate data collection

Infection Screening

- Nurse assessment and documentation during Triage/Admission process
- Any of the following findings constitutes a positive infection screen:
  - Diaphoretic and/or chills
  - Drainage, redness, and/or warmth from wound/incision/insertion site
  - Dysuria, urinary frequency, and/or malodorous urine
  - Mental status change from patient baseline
  - Productive cough
  - Shortness of breath


Signs and Symptoms of Infection/Communicable Disease

Signs/symptoms present:

No signs/symptoms | Diaphoretic and/or chills | Diarrhea

Drainage, redness, and/or warmth from wound/incision/insertion site

Dysuria, urinary frequency, and/or malodorous urine | Fever

Mental status change from patient baseline | Non-productive cough | Productive cough

Runny nose | Shortness of breath | Skin rash | Sore throat | Other (comment)

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Best Practice Advisory: ED Nurse 1

- Triggered by positive infection screen and abnormal vital signs
- "Accept" links to ED Nursing Sepsis Order Set
- Prompts nurse to notify the physician
- Initial alert is a pop-up, then displays in ED workspace
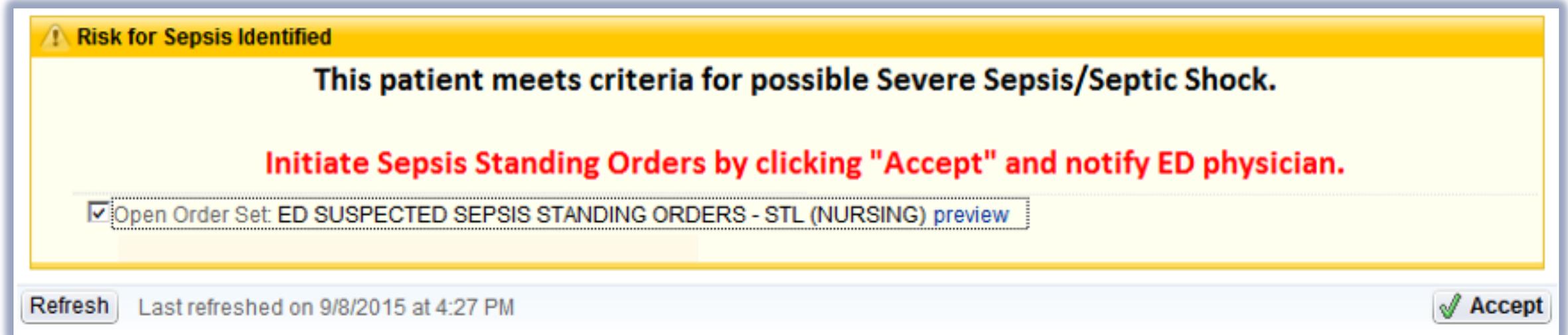
⚠ **Risk for Sepsis Identified**

This patient meets criteria for possible Severe Sepsis/Septic Shock.

Initiate Sepsis Standing Orders by clicking "Accept" and notify ED physician.

☑ Open Order Set: ED SUSPECTED SEPSIS STANDING ORDERS - STL (NURSING) preview

Refresh   Last refreshed on 9/8/2015 at 4:27 PM   ✓ Accept

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ED Nursing Sepsis Order Set: Overview

- Used by the nurse to initiate ED admission primarily during triage
- All orders are either auto-selected or contain explicit instructions
- New text highlights the SEP-1 components of the Order Set

▽ ED SUSPECTED SEPSIS STANDING ORDERS - STL (NURSING) Manage My Version ▼

CMS Sepsis Core Measure requirements included in Order Set:

-- **Crystalloid bolus:** ≥ 30 ml/kg NS or LR, initiated within 3 hrs -- initiate if patient hypotensive.

         Note: *Patient must be monitored for "persistent hypotension" during 60 min immediately following bolus*

-- **Blood cultures:** *Specimen(s) collected prior to initial dose IV antibiotic(s) and within 3 hrs*

-- **Lactic acid:** *Initial specimen collected within 3 hrs. If initial level > 2 must have repeat lactic acid collected within 6 hrs*

Best Practice Advisory: ED Nurse 2

- Used in Wisconsin and Maryville hospitals

- Triggered by positive infection screen and abnormal vital signs

- "Physician notified (specify in comments)" will suppress the nurse BPA but not the physician BPA

- Initial alert is a pop-up, then displays in ED workspace

⚠ **Risk for Sepsis Identified**

This patient meets criteria for possible Severe Sepsis/Septic Shock.

Notify ED physician for further evaluation and treatment orders.

Acknowledge reason: 🔍 📄

Physician notified (specify in comments)

Refresh   Last refreshed on 9/8/2015 at 6:23 PM   ✔ Accept

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Best Practice Advisory: ED Physician

- Triggered by positive infection screen and abnormal vital signs
- "Accept" will link to ED Physician Sepsis Order set
- "Evaluation not consistent with sepsis" suppresses the BPA and allows tracking
- Alert displays in the ED workspace with other BPAs

⚠ **Consider Sepsis**

This patient meets criteria for possible Severe Sepsis/Septic Shock.
Use the "opt-out" button below if evaluation is not consistent with Sepsis.

Initiate Sepsis Orders by clicking "Accept."

Acknowledge reason: [　　　　　　　　　　　　] 🔍 ☐

[Evaluation not consistent with sepsis]

☑ Open Order Set: ED SEPSIS (IP-SSM) preview

[Refresh]   Last refreshed on 9/8/2015 at 6:14 PM   ✓ Accept

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ED Physician Sepsis Order Set: Overview

- New text highlights the SEP-1 components of the Order Set
- Serial lactic acid levels
- Blood cultures
- Antibiotics comply with SEP-1 requirements
- IV fluid bolus
- Vasopressors list was updated to match SEP-1 requirements
- Central line insertion orders include CVP and mixed venous blood gas
- New SEPSIS PATIENT order

SEPSIS PATIENT Order

- SEPSIS PATIENT is found in the physician ED Order Sets
- "Identification" order indicates the physician is treating the patient for sepsis
- All ED Sepsis BPAs are suppressed with an active SEPSIS PATIENT order
- Logic hides the order in the Order Set if it is already active
  - Prevents duplicate SEPSIS PATIENT orders
  - Allows repeated use if needed as patient progresses

PATIENT IDENTIFIER

Sepsis Patient

⦿ SEPSIS PATIENT

Do not discontinue this order – used to track patients being treated with Sepsis bundle orders.

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ED Trackboard: Sepsis Risk Banner

- Sepsis Risk Banner is found in ED Trackboard Summary Reports

- Logic built to display the banner if either:
  - The physician Sepsis BPA is active
  - The patient has an active SEPSIS PATIENT order

- The banner displays if the patient meets sepsis criteria or is being treated for sepsis

Sepsis Risk Patient

6-Hour Focused Exam Note Template

- Assist documentation of the Repeat Focused Exam for Septic Shock
- Contains all required elements for SEP-1 measure

Septic Shock 6-Hour Focused Exam

Most Recent Vital Signs

    @VS@

Focused Exam

    Cardiac: Rhythm - {Exam; rhythm:22924} {Exam; cardiac:22892}

    Peripheral pulses: {Exam; peripheral pulses:22917}

    Capillary refill: {Exam; capillary refill:22918}

    Pulmonary: {Exam; lung:22905}

    Skin condition: {Exam; skin condition:22926}

    Skin color: {Exam; skin color:22908}

Plan/Recommendation

***

6-Hour Focused Exam Note Template (cont'd)

Septic Shock 6-Hour Focused Exam

Most Recent Vital Signs
    @VS@

Focused Exam
    Cardiac: Rhythm - {Exam; rhythm:22924} {Exam; ca
    Peripheral pulses: {Exam; peripheral pulses:2291
    Capillary refill: {Exam; capillary refill:22918}
    Pulmonary: {Exam; lung:22905}
    Skin condition: {Exam; skin condition:22920}
    Skin color: {Exam; skin color:22908}

Plan/Recommendation
***

Radial and pedal pulses palpable, symmetric bilaterally in all extremities
Radial pulses intact/symmetric { 0-4+:18880}
Dorsalis pedis pulses intact/symmetric { 0-4+:18880}
Posterior tibial pulses intact/symmetric { 0-4+:18880}
R radial pulse { 0-4+:18880}
L radial pulse { 0-4+:18880}
R dorsalis pedis { 0-4+:18880}
L dorsalis pedis { 0-4+:18880}
R posterior tibial { 0-4+:18880}
L posterior tibial { 0-4+:18880}
{COMPLETE PULSE TABLE:TXT,30011700}
***

capillary refill less than 2 seconds, no clubbing or cyanosis noted
capillary refill greater than 2 seconds
clubbing noted, {r/l/b:18451} {upper/lower:21139} extremities
***

SEP-1 Education

- Education to clinicians and abstractors:
  - Differentiation between sepsis, severe sepsis, and septic shock
  - New CMS SEP-1 interventions
  - EHR updates
  - Improved workflows
- Physician/APN/PA education regarding accurate documentation
- Coding team education to appropriately code patients with sepsis, severe sepsis, and septic shock

SEP-1 Education Methods

- Tip sheets

- E-learning development

- Tri-fold pocket cards

- Presentations to specialty teams

- Grand Rounds

- Sepsis screensavers

Data Monitoring

- Development of electronic system-wide, hospital-specific, and clinician-specific reports that measure compliance

- Development of outlier spreadsheets and SEP-1 outlier database

- Hospital-specific outlier review to drive process improvement

- Clinician-specific feedback to improve performance

- Standardized performance scorecards are in development and will be sent to each hospital monthly

Recommendations for Improving Severe Sepsis and Septic Shock Treatment

- Cultural change regarding the early identification and time-sensitive treatments

- Compliance with new CMS SEP-1 measure will help mediate this cultural change

- Goal: Develop tools for providers to achieve success

Recommendations for Improving Compliance with SEP-1

- Clinician engagement: Identify clinician champions
- Heightened awareness of severe sepsis and septic shock
- Wide-scale screening and early recognition of sepsis
- Treatment urgency: Time-sensitive treatment (STEMI and acute stroke)
- Development of hospital-based Code Sepsis Team

Recommendations for Improving Compliance with SEP-1 (cont'd)

- Identification and creation of local, regional, and system sepsis teams for large health care systems

- Develop EHR and educational tools to improve compliance

- Accurate data to drive process improvement at every level of the organization: System, regional, local

Presentation Acknowledgments

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SEP-1 EARLY MANAGEMENT BUNDLE SEVERE SEPSIS/SEPTIC SHOCK: MEASURE UPDATES

BOB DICKERSON, MSHSA, RRT

LEAD HEALTH INFORMATICS SOLUTION COORDINATOR
HOSPITAL INPATIENT AND OUTPATIENT PROCESS AND STRUCTURAL MEASURE
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SEP-1 Changes in Manual version 5.0b (slide 1 of 3)

Data Element	Brief Summary of Changes
Broad Spectrum or Other Antibiotic Administration	• Clarified the administration time frame wording to indicate IV antibiotics must be given in the 24 hours prior to OR 3 hours following presentation of severe sepsis • Removed references to Tables 5.0 and 5.1 as they are not applicable for this data element
Broad Spectrum or Other Antibiotic Administration Time	• Clarified the time required for the IV antibiotic administration
Broad Spectrum or Other Antibiotic Administration Selection	• Clarified guidance on administration of the combination therapy

SEP-1 Changes in Manual version 5.0b (slide 2 of 3)

Data Element	Brief Summary of Changes
Crystalloid Fluid Administration	• Clarified wording to indicate that fluids could be given prior to presentation of septic shock
Persistent Hypotension	• Corrected the reference of 30 mL/kg as a rate to be a volume • Clarified guidance around what documentation is used to determine the presence of persistent hypotension • Added guidance to indicate not to use readings that were documented as erroneous

SEP-1 Changes in Manual version 5.0b

Data Element	Brief Summary of Changes
Septic Shock Present, Septic Shock Presentation Date, Septic Shock Presentation Time	• Clarified the abstraction guidance regarding the initial lactate level and the volume of crystalloid fluids administered • Clarified that nursing documentation can be used
Severe Sepsis Present, Severe Sepsis Presentation Date, Severe Sepsis Presentation Time	• Added nurses notes/documentation to suggested data sources and clarified the criteria for Severe Sepsis

Continuing Education Approval

- This program has been approved for 1.0 continuing education (CE) unit for the following professional boards:
  - Florida Board of Clinical Social Work, Marriage and Family Therapy and Mental Health Counseling
  - Florida Board of Nursing Home Administrators
  - Florida Council of Dietetics
  - Florida Board of Pharmacy
  - Board of Registered Nursing (Provider #16578)
    - It is your responsibility to submit this form to your accrediting body for credit.

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  – Healthcare facilities have firewalls up that block our certificates

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CE Credit Process: Survey

○ No
Please provide any additional comments

[text box]

10. What is your overall level of satisfaction with this presentation?
○ Very satisfied
○ Somewhat satisfied
○ Neutral
○ Somewhat dissatisfied
○ Very dissatisfied

If you answered "very dissatisfied", please explain

[text box]

11. What topics would be of interest to you for future presentations?

[text box]

12. If you have questions or concerns, please feel free to leave your name and phone number or email address and we will contact you.

[text box]

[Done]

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Note: If you click the 'Done' button below, you will not have the opportunity to receive your certificate without participating in a longer survey.

Done

CE Credit Process: New User

CE Credit Process: Existing User

Questions?