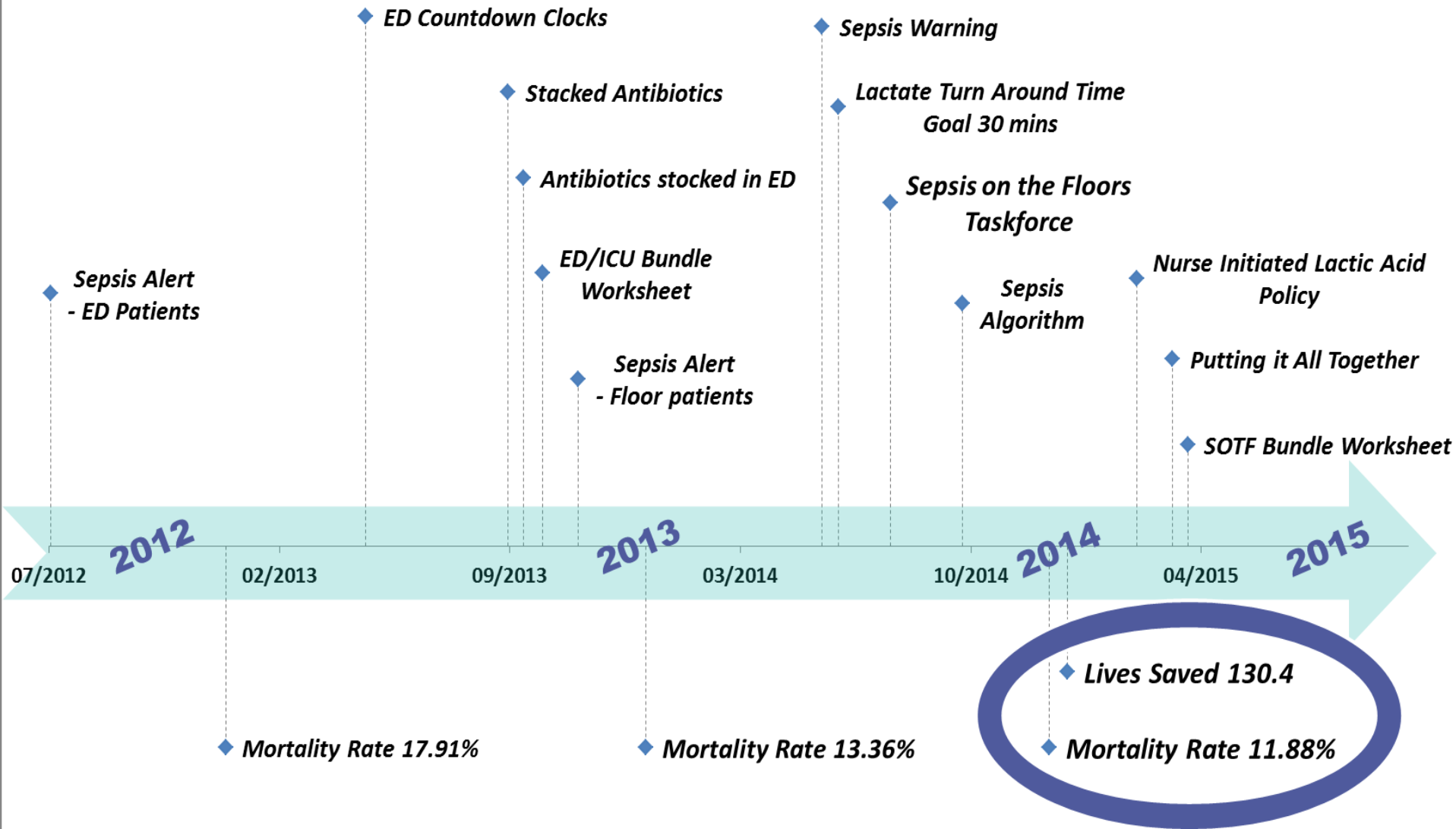


Kennedy University Hospital

- **Kennedy's Sepsis Taskforce Goals:**
 - Improve outcomes and quality of care for sepsis patients
 - Reduce mortality to less than 10% by December 2015
 - Provide evidenced-based care
 - Lessons learned from case drill-downs of missed opportunities
 - Promote nurse-driven lactate policy
 - Continuing education for all staff and physicians



Results



The Kennedy Experience: Consistent Practice, Consistent Results



Changes We Tested

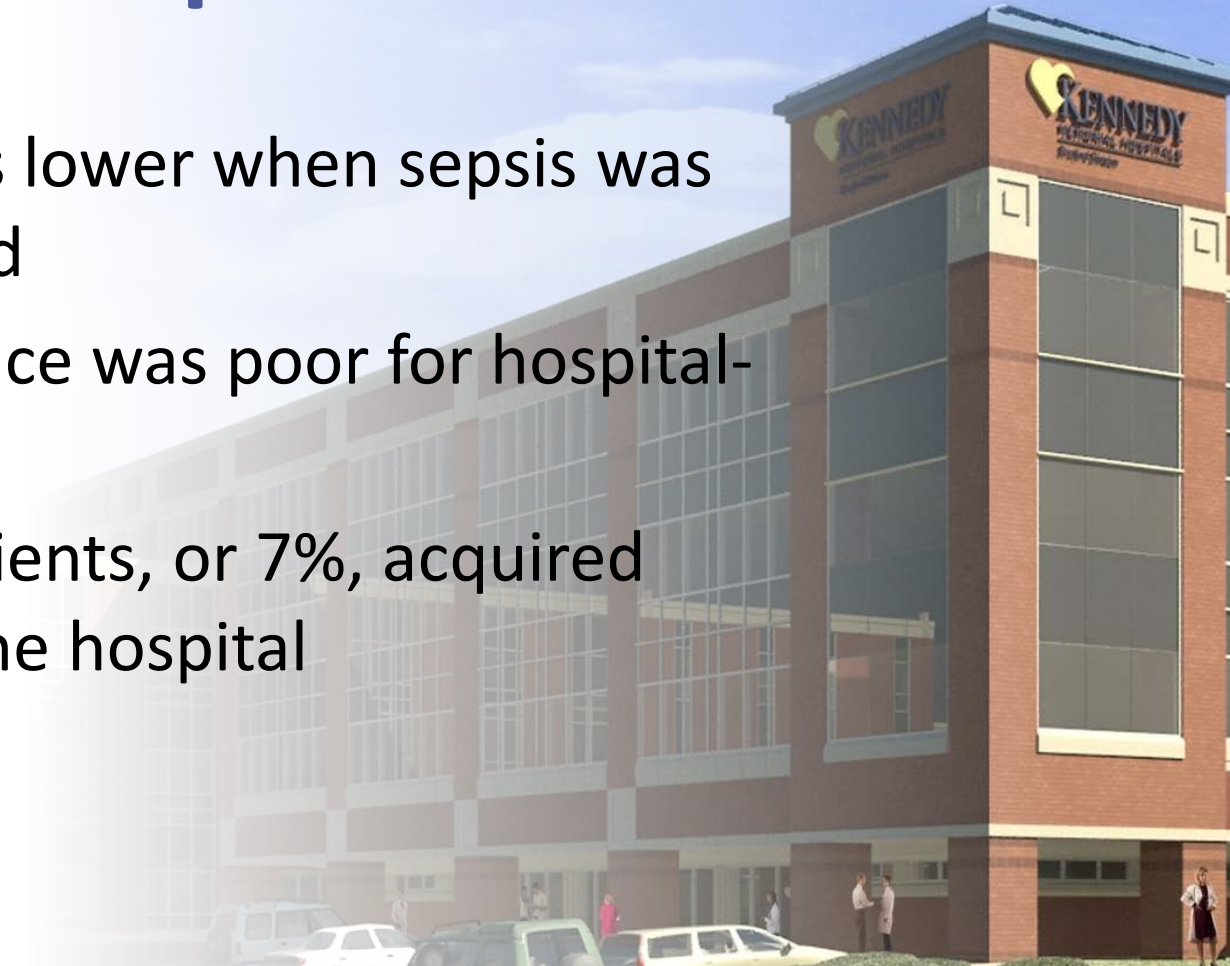
- Sepsis Algorithm
- “Putting It All Together” posters
- Read & Sign computer-based learning
- Sepsis classes
- Sepsis worksheets
 - ED to ICU and Floor Patients

Changes We Tested to Reach Our Aim

- Sepsis warnings/alerts in the ED
- Lactate turn-around time goal of 30 minutes
- Nurse-driven lactate policy
 - RN to draw lactate if 2 SIRS criteria are met
- Stock ED with commonly used ABX
- Development of “Sepsis on the Floors” taskforce
- “Sepsis alerts” on general floor patients
- Joint RN and physician lectures

We Were Surprised to Learn...

- Survival rate was lower when sepsis was hospital-acquired
- Bundle compliance was poor for hospital-acquired sepsis
- In 2014, 149 patients, or 7%, acquired sepsis while in the hospital



We Wonder if We Should...

- Facilitate approval of our RN-initiated blood culture policy
- Initiate mandatory education of CMS sepsis guidelines for all staff and physicians
- Work toward risk-stratifying data for further analysis
- Develop “Prevent Sepsis Before it Even Occurs” posters



The Kennedy Experience: Consistent Practice, Consistent Results



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SEPSIS: PUTTING IT ALL TOGETHER

SEPSIS

SEPSIS is TWO of the following, plus a source of infection:

- Temperature < 96.8 or > 100.4
- Heart rate > 90
- Respiratory rate > 20
- WBC > 12 or < 4
- Bandemia > 10%

If you have identified Sepsis, draw a STAT Lactate in accordance with RN Initiated Lactic Acid Policy.

Call a physician immediately if lactate ≥ 4 .

SEVERE SEPSIS

SEVERE SEPSIS is Sepsis (see left column) plus evidence of organ damage/dysfunction. End-organ damage is any of the following:

- Lactate ≥ 4
- Altered mental status
- Acute kidney injury
- Elevated troponin levels
- Acute respiratory distress syndrome
- New/Worsened elevation of ALT and AST
- Urine output < 0.5 ml/kg/hr
- New/Worsened platelet count < 100

Call an RRT for sepsis evaluation in your patient.

SEPTIC SHOCK

SEPTIC SHOCK is Severe Sepsis (see middle column) plus hypotension despite a 30 ml/kg NSS IVF bolus.

Call an RRT if this is your patient. If your patient remains hypotensive, after the above bolus, he/she will be transferred to the ICU.

Early Recognition of Sepsis

STEP 1

*CNA/Tech
Assesses Patient
Upon Arrival
and Each Time
Vital Signs
are Taken*

Respiratory Rate > 20	YES	NO
Heart Rate > 90	YES	NO
Temperature < 36 (96.8) or > 38 (100.4)	YES	NO

If you circled "YES" to *ONE* or *NONE*, the evaluation is complete. No further action is necessary.

BUT, if *TWO* or *THREE* are "YES," then **ALERT** the nurse to perform Step 2.

STEP 2

*RN Assesses
Patient After
Being Alerted
by CNA/Tech*

Check blood pressure and lab work		
Is MAP < 65	YES	NO
Is WBC < 4 or > 12	YES	NO

If **BOTH** of the above are "NO," then page the Primary Team or overnight Intern to alert them SIRS Criteria has been met for this patient, and draw a STAT Lactate. If no CBC done, call doctor for STAT CBC. If no response received, call RRT.

If **EITHER** of the above are "YES," then immediately call a **RAPID RESPONSE** for Sepsis Evaluation.

SEPSIS FLOOR WORKSHEET	Rapid response called [] NO [] YES _____ (time)	Patient Sticker
DATE: _____	Sepsis Alert called [] NO [] YES _____ (time)	
Time of 1st STAT lactic acid: _____	[] Initial labs Time drawn _____ [] Serum lactic acid: Time Ordered _____ Time Drawn _____ RESULT: _____ [] Blood Cultures x 2 Time 1 _____ Time 2 _____ [] Initial fluid resuscitation: MAP _____ (MAP = [2(DP) + SP] ÷ 3) Patient weight (kg) _____ X 30 ml = _____ ml NSS OVER 1 HOUR Start time _____ Time of completion _____ [] Antibiotic (name) <i>Infusion must be completed collaboratively between floor and ICU. Antibiotics may run concurrently- check drug to drug compatibility (see back)</i> 1st _____ Time _____ [] Floor [] ICU 2nd _____ Time _____ [] Floor [] ICU 3rd _____ Time _____ [] Floor [] ICU	
Achieved within First Hour Time of 1st STAT lactic acid + 1 hour = Time _____	[] Continuous Infusion Rate NSS @ _____ ml/hour (start immediately after bolus complete) [] Additional Fluid Resuscitation 1000 ml every 30 minutes or until MAP > 65 <i>Fluid resuscitation managed collaboratively by Floor or ICU RN</i> Time _____ Amount _____ MAP _____ Time _____ _____ Amount _____ MAP _____ Time _____ Amount _____ MAP _____ Time moved to ICU _____ Central Line Placed: YES / NO Time _____ If no, why not? Floor Intake _____ Output _____	
Achieved by Third Hour Time of 1st STAT lactic acid + 3 hours = Time _____	Repeat lactic acid ____ (ensure repeat lactic acid by 6 hrs) Improved Lactic Acid ___ Yes ___ No <i>Vasopressors for hypotension (MAP < 65) that does not respond to initial resuscitation</i> Time _____ Drug _____ Conc _____ Time _____ Drug _____ Conc _____	
Achieved by Sixth Hour Time of 1st STAT lactic acid + 6 hours = Time _____		

Floor RN Signature _____ Date/Time _____

ICU RN Signature _____ Date/Time _____

TIME IS TISSUE! PATIENT MUST HAVE ALL TASKS COMPLETED WITH 6 HOURS FROM TIME OF 1ST VITAL SIGNS TO 2ND Lactic Acid.

Floor- Send worksheet with patient to **RECEIVING UNIT**

NOT A PERMANENT PART OF THE RECORD

Revised 3/15

DATE: _____	Sepsis Warning called (ED) [] NO [] YES _____ (time)	Patient Sticker
Time of GREET _____	Sepsis Alert called [] NO [] YES _____ (time)	
Achieved within First 90 minutes Time of GREET + 90 minutes = Time _____	<input type="checkbox"/> Initial labs Time drawn _____ <input type="checkbox"/> Serum lactic acid: Time Ordered _____ Time Drawn _____ RESULT: _____ <input type="checkbox"/> Blood Cultures x 2 Time 1 _____ Time 2 _____ <input type="checkbox"/> Initial fluid resuscitation: MAP _____ (MAP = 2(DP) + SP ÷ 3) Patient weight (kg) _____ X 30 ml = _____ ml NSS OVER 1 HOUR Start time _____ Time of completion _____ <input type="checkbox"/> Antibiotic (name) <i>Infusion must be completed collaboratively between ED and ICU. Antibiotics may run concurrently- check drug to drug compatibility (see back)</i> 1st _____ Time _____ [] ED [] ICU 2nd _____ Time _____ [] ED [] ICU 3rd _____ Time _____ [] ED [] ICU	
Achieved by THIRD Hour Time of GREET + 3 hours = Time _____	<input type="checkbox"/> Continuous Infusion Rate NSS @ _____ ml/hour (start immediately after bolus complete) <input type="checkbox"/> Additional Fluid Resuscitation 1000 ml every 30 minutes or until MAP > 65 <i>Fluid resuscitation to be managed collaboratively by ED or ICU RN</i> Time _____ Amount _____ MAP _____ Time _____ Amount _____ MAP _____ Time _____ Amount _____ MAP _____ Time moved to ICU _____ Central Line Placed: YES / NO Time _____ If no, why not? ED Intake _____ Output _____	
Achieved by Sixth Hour Time of GREET + 6 hours = Time _____	Sevo2 _____ (goal > or = to 70) Initial CVP reading _____ (8-12 mmHg non-vented) (12-15 mmHg vented) <i>Vasopressors for hypotension (MAP <65) that does not respond to initial resuscitation</i> Time _____ Drug _____ Conc _____ Time _____ Drug _____ Conc _____	

ED RN Signature _____ Date/Time _____

ICU RN Signature _____ Date/Time _____

TIME IS TISSUE! PATIENT MUST HAVE ALL TASKS COMPLETED WITH 6 HOURS FROM TIME OF GREET TO CVP AND SCVO2. Revised 4/15

Emergency Department- Send worksheet with patient to RECEIVING UNIT

NOT A PERMANENT PART OF THE RECORD

Stages of Sepsis

SIRS Criteria: Characterized by 2 or more of the following conditions:

Temperature < 96.8 or >= 100.4;

HR > 90;

Respirations > 20

PaCO₂ < 32mmHg

WBC > 12K, < 4K or > 10% Bands

Sepsis: SIRS plus a documented infection with at least 2 or the 4 SIRS criteria

Severe Sepsis: Sepsis associated with dysfunction of one or more organ systems

Septic Shock: Sepsis with SBP <90 mmHg after 30mL/kg crystalloid IV OR Lactate =/ >4

IV DRUG Y-SITE COMPATIBILITY

Vancomycin	Zosyn®	Cefepime	Azactam®	Linezolid	Levaquin
Compatible: Levaquin, Norepinephrine, Epinephrine, Dopamine	Compatible: n/a	Compatible: Norepinephrine Epinephrine Dopamine Vancomycin	Compatible: Levaquin Vancomycin Norepinephrine Epinephrine Dopamine	Compatible: Levaquin Zosyn® Dopamine	Compatible: Vancomycin Azactam® Linezolid Epinephrine Dopamine
Not Compatible: Zosyn®	Not Compatible: Levaquin Norepinephrine Epinephrine	Not Compatible: Levaquin	Not Compatible: n/a	Not Compatible: Cefepime Norepinephrine Epinephrine Dopamine	Not Compatible: Zosyn® Cefepime Norepinephrine

Sources: Lexicomp 9/2013

PREVENT SEPSIS BEFORE IT OCCURS!

PREVENT CLABSIs and CAUTIs
Follow Central Line & Urinary Catheter Policies.
Remove all lines and Foleys if not medically necessary.



PREVENT CDI/F
Choose appropriate antibiotic dose, duration, and stop date. Use PPIs and H2 blockers when medically indicated.



PREVENT SURGICAL SITE INFECTIONS
Follow SCIP protocol.
Practice appropriate post-op incisional care.



REMEMBER:

- Wash your hands. Every time – everyone!
- Proactively manage high-risk patients.
- Educate patients about infection prevention.

PREVENT ASPIRATION PNEUMONIA
Maintain 30 degree elevation for feeding and oral care.



PREVENT PERITONITIS
Be aware of constipation, obstruction, and abdominal perforation.

